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February, 1989

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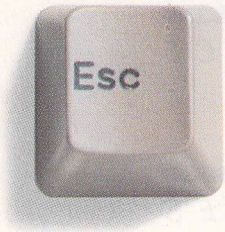

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CONTENTS

BUSINESS/INVESTING

12 A Less Taxing Experience
Using online services can make tax time less troublesome.

13 Mutual Gains
Properly-maintained mutual funds can benefit investment groups.

NEWS/REFERENCE

14 Micro-age Medicine
Research cures for common maladies online.

COMPUTING SERVICES

16 Full-color Focus
Picture Forum enlarges to meet exponential graphics needs.

LIFESTYLES

20 All the Right Moves
Strategic decision-making is just part of the game. Masters and players engage in multi-level role-playing contests where having several lives is commonplace and reality fades into an intangible netherworld.

TRAVEL

30 A Greek Odyssey
Island vacationers experience centuries of culture.

34 Depths of Experience
Scuba enthusiasts tell tales and trade advice.

DEPARTMENTS

4 *Dear Reader*
5 *Letters*
6 *Monitor*
10 How to Get the Most Out of CompuServe
26 *On The Mall*
36 *Uploads: New Forum Files*
37 *At Your Service*
38 *Software Reviews*
44 *Books*
46 *Industry Watch*
48 *Update: Last-minute News*

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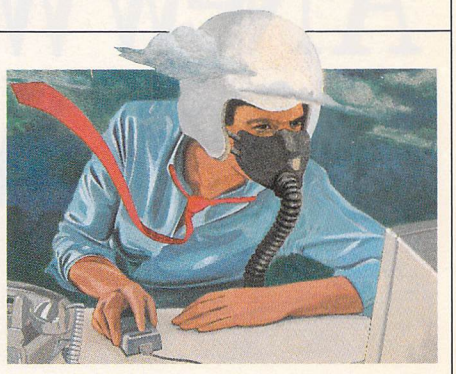
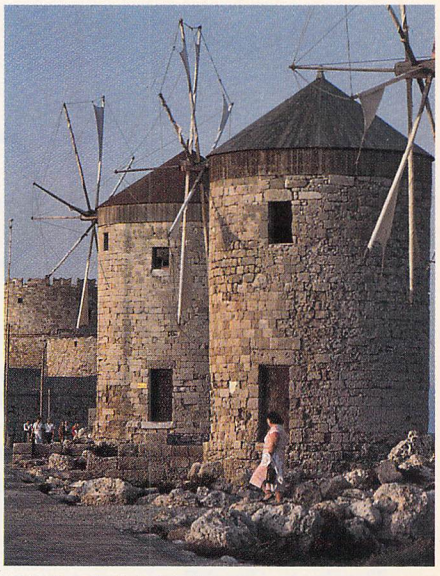


COVER

Avid electronic gamers can alter their (online) destinies without ever leaving their chairs. Find out how—page 20



TRAVEL

A Grecian getaway provides the ultimate odyssey—page 30

Too Hot to Print

Catch computer industry news as it happens, keep up with online events, read special reports, commentary and more product reviews. You'll find it only in *Online Today Daily Edition*, a daily-updated newspaper full of information that's too hot to print. GO OLT.

Behind the Screens	**OLT-130**
CompuServe This Week	**OLT-50**
Letters to Editor	**OLT-30**
News This Week	**OLT-20**
Online Inquiry	**OLI-1**
Online Today Columns	**OLT-110**
Online Today Guide	**OLT-351**
Product Reviews	**OLT-200**
Special Reports	**OLT-2000**
Today's Daily News	**OLT-90**

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DEAR READER

Despite fewer days in February, it seems like one of the longest months of the year. Winter drags on. Holiday bills come home to roost. Tax time looms and your Buster Brown shoebox is missing. You found another gray hair. You have gingivitis. Is there no relief in sight?

Yes, there is, bunkie. February is probably the best time of year to lose yourself and your troubles in a good online game. Take CompuServer Beth Pickett. She's a witch. She cavorts with thieves and has died a dozen deaths. Debbie Deutsch hunts fowl in the mines of Torii. Russell Sipe works on the ground as a magazine publisher but through simulation games he can take to the sky as an Air Force pilot.

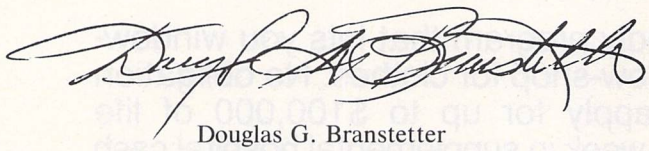
Mind you, these people are not playing ordinary "computer games." Online gaming is more strategy-oriented and players match wit and skill against other people, not a computer. Sometimes the people who created the games are actually online playing them. And, of course, there are the appealing elements of fantasy, role-playing and Escape From February.

Despite the proliferation of stand-alone computer entertainment, online gaming has a strong and rapidly-growing base of avid players and game creators. Because online games have the advantage of residing on larger and more powerful mainframe computers — and possess the added dimension of live interaction — they are more sophisticated, more demanding and more fun.

Find out what Beth, Debbie and Russ already know. Take a tour of CompuServe's world of online gaming with OLT contributing editor Holly Miller in this month's cover feature beginning on page 20. Then, take up a good game, and leave February and your troubles behind.

* * *

Meanwhile, back in real life, tax time is here again. There is plenty of online tax preparation assistance for you on the CompuServe Information Service. You'll find Tax Tips and Questions from H&R Block, the world's largest tax preparation service. Find out more about Block's service and others on page 12.



Douglas G. Branstetter
Editor

ONLINE TODAY

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LETTERS

Bilingual ATMs

I have a comment regarding the article "Hawaiian ATMs Go Bilingual" (December issue, page 7). The Bank of Hawaii is not the first bank to install bilingual ATMs; Perpetual Savings Bank of Washington, DC has had bilingual English-Spanish ATMs for several years in locations with many Hispanic customers.

Eric S. Rubin
Washington, DC

The MPact system (MBank) in Texas has been "speaking" English and Spanish for three or four years. I have gotten my cash "in Spanish" a few times just for fun.

Tom Perry
Midland, Texas

In Canada, we have had bilingual (English/French) ATMs for well over a year now. It seems that our south-of-the-border friends are suffering from "not invented here" syndrome.

Robert Morgan
Campbellford, Ont.

Writer's response: Although English/Spanish terminals have been installed on the mainland for some time, those used by the Bank of Hawaii are claimed to be the first in the nation to switch automatically and completely into the alternate (Japanese) language.

Typically, English/Spanish ATMs begin their display cycle with an English prompt and then switch to Spanish if that language is requested by the customer. Some English/Spanish ATM terminals display both languages at the same time.

Bank of Hawaii bilingual ATMs are controlled by two separate but similar programs activated by specially encoded bank cards. It is the coding on the bank card that activates the ATM and begins screen displays in the customer's language. Perhaps even more significant is that the Bank of Hawaii ATM network allows visiting Japanese to access funds made available through their own bank in Japan.

James Moran
Online Today

EasyPlex/FAX Link

In response to the article about sending FAX messages via EasyPlex (October issue, page 14), I had an experience I would like to share with *Online Today* readers.

I was in Hong Kong recently and woke up early one morning to get ready for an 8 a.m. breakfast meeting. I wanted to summarize the previous day's meetings on my laptop, but I had no way to print the output at the hotel, and I had not bought printer cables for my nonstandard portable (a 2-pound Cambridge Z88). I wondered what to do.

Then, I had an inspiration. I called CompuServe Customer Service in the United States (when it is 3 a.m. in Hong Kong, it is 4 p.m. in Columbus) and got the call procedures for Hong Kong. I then logged on to CompuServe, accessed EasyPlex, uploaded my document and FAXed it to my hotel.

Less than 30 minutes later, the message light came on in my room and an envelope was quietly slipped under my door. It was the eight-page printout. I had it copied and arrived at breakfast with documents in hand—totally amazing my associates and impressing myself as well. I had used CompuServe's EasyPlex to cross the planet and FAX me back. The cost: $18. Worth every penny.

Mike Weiner, President
Microlytics
Pittsford, NY

Correction

In the article "Used Microcomputer Market Multiplies" (December issue, page 7), a phone number is incorrectly listed. The National Association of Computer Dealers can be reached at 713/496-3283. The number listed (202/333-0102) is actually for the Computer Dealers and Lessors Association.

Send a Letter

OLT-30 **Letters to the Editor** *main menu. Lists all departments.*

OLT-31 **Send a letter instructions.** *Complete instructions on how to send a letter to the editor via the electronic service.*

OLT-32 **Read letters** *from other OLT readers.*

OLT-33 **Send a letter** *to the editor. You will receive prompts for each step in the process. Important Note: We cannot answer questions regarding the CompuServe Information Service through this service. If you have questions or problems, please use the Feedback service (GO FEEDBACK).*

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Open Collar Society

You've heard of blue-collar and white-collar workers. Now "open collar" workers—those who work from home—are emerging as a stronger force in the American workplace.

Paul and Sarah Edwards, administrators of the Work From Home Forum, have spent years studying and promoting the idea of working from home. One of the latest findings of their research is that open-collar workers share four major psychological characteristics.

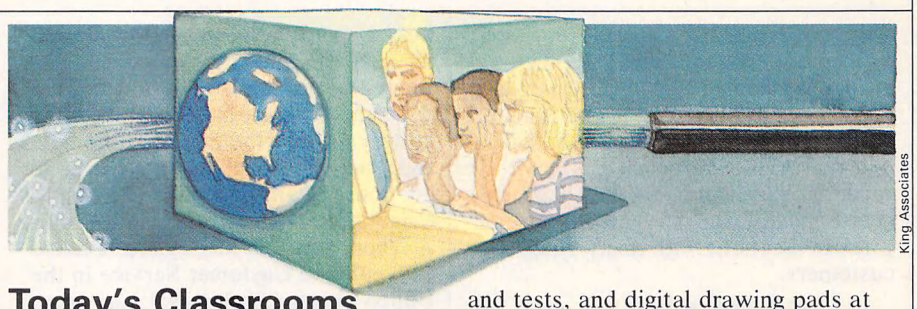
Two out of three people who choose to work from home prefer to do things their own way, relying on their own internal judgments and evaluations in making decisions, according to the Edwardses. "They're more apt to live by the song 'My Way' rather than 'Everybody's Doing It,'" they say. "This means that as customers and employees, homeworkers are apt to be better at telling than listening."

In addition, 75 percent of homeworkers choose to work at home not because of what they will avoid, but rather for what they stand to gain, such as feeling more control over their lives, spending more time with their families and saving money. The Edwardses say that these are greater motivators than avoiding such problems as rush-hour traffic jams, office politics and stress.

The Edwardses also found that 75 percent of homeworkers are motivated by possibilities and new opportunities instead of remaining in a comfort zone —staying with known ways of doing things or established procedures. They point to the success of such companies as Apple Computer, Baskin-Robbins Ice Cream, Domino's Pizza, Hershey Foods, Hallmark Cards, Hewlett-Packard, Nike Shoes and Walt Disney World Co., all of which started as home businesses.

Finally, the Edwardses say that two out of three people working from home are "proactive" in their work lives; that is, they act to make things happen and do things now rather than waiting and responding to events. This characteristic is reflected in the number of entrepreneurial ventures undertaken at home. The Edwardses estimate that a new home business is born every 45 seconds.

For more information, consult Paul and Sarah Edwards in the Work From Home Forum (GO WORK) or at User ID number 76703,242.



King Associates

Today's Classrooms Fast-forward to Future

The classroom of the future is a high-tech dream come true. Kurt Harper, a doctoral student in educational management and a projects specialist at a California high school, has made some heady predictions as to what American classrooms will look like at the turn of the century.

Fiber optic cable will be used for simultaneous audio, visual and data transmission to bring the school into the home and the home into the school. National and international data networks will allow, for example, American students studying China to correspond electronically with students in Singapore. Optical disk simulation labs will allow vicarious execution of potentially dangerous or otherwise unfeasible lab experiments.

Harper, who is the Education Forum's section leader on Future Talk, also predicts that large, thin, LCD-type displays for text, graphics and video will be used, for instance, to enhance a lecture on the storming of the Bastille by transforming a classroom into a dungeon. Laser holographics will allow three-dimensional reconstruction of historical sites, works of art or architectural designs.

Students will use affordable notebook-sized computers to take notes and tests, and digital drawing pads at their desks will allow them to share visual explanations of their thinking and questions.

Not only will this technological revolution change classroom furnishings, but Harper believes it also will change teachers' roles, making them far more valuable professionals than they are now.

"The teacher will be a master of learning and not just content matter," he says. He foresees teachers and students who prefer one form of learning —aural, visual or tactile—being matched up with each other. Teachers will benefit so much from the technology that Harper believes they will easily double or even triple their knowledge of a subject as they learn with their students.

The greatest advantage to the students will be instruction tailored to individual needs. Harper, who is already using much of this futuristic equipment in classes, introduced networked IBM computers into a class of disadvantaged students and watched them advance 2.4 grade equivalents in math in a single year as tested on the California Achievement Test.

For more information, contact Kurt Harper in the Education Forum or via EasyPlex at User ID number 76703,674.

—Cathryn Conroy

Smart Stuff

StreetSmart, a personal computer software package, enables fire departments, police and other emergency services to immediately locate any address. A Chicago-area company, Street Map Software, developed the software, which can deliver its directions to either a graphics display or printer.

A precursor to StreetSmart offered restricted mapping capabilities, but the company says its new product has greatly improved power. Large maps can be constructed to indicate addresses, distances and speed limits. Other information, such as movement restrictions, also can be displayed by the program. The map database is built either through typing manual coordinates or by using a digitizer to trace routes on a standard road map.

Although the software is targeted at emergency service providers, commercial delivery services may find it useful because it can route vehicles through 100 locations in a single trip.

More information is available from Street Map Software at 312/529-4044.

—James Moran

Satellite Elevates Education

Higher education may be headed in a new direction, thanks to National Technological University. Since 1984, this Fort Collins, Colo.-based university has used satellite technology to bring together students and faculty from around the country.

Picture several managers gathered in a company conference room for a graduate-level class in engineering. Through a television monitor, a television camera and a telephone line, they are joined—via satellite—by similar groups around the country. The lecturer may be in Massachusetts, Texas or Alaska, but students at each office site can ask questions and participate in discussions.

Students who must miss an interactive class don't miss out completely. All classes are videotaped, and students who are absent can later review those tapes at home.

National Technological University broadcasts simultaneously on two satellite channels 24 hours a day. Live, interactive courses are offered between 9 a.m. and 3 p.m. Other courses are taped, then reviewed by students the following day.

"We are a technical university," explains Christi Kari, marketing associate for NTU. The university offers master of science degrees in computer science, computer engineering, electrical engineering, engineering management and manufacturing systems engineering.

Students can tap the talents of professors at 24 institutions around the country. Participating universities span the country, including Northeastern University in Boston, the University of Alaska, Purdue University in Indiana, Southern Methodist University in Texas, Colorado State University and the University of Washington.

Participating companies benefit from the program because employees can get the specialized training they need while still remaining on the job. Students benefit from the convenience of attending classes without leaving the office.

Sixty-five companies participate in the program, which offers the classes via satellite at 215 sites, include AT&T, Digital Equipment Corp., Du Pont, General Electric, Hewlett-Packard, Honeywell and IBM. During the popular fall term, enrollment often reaches 1,200 students.

A new degree in management of technology will be offered in January, and additional study programs are planned for the future.

"I feel we are pioneers," says Kari. To Kari's knowledge, NTU is the first institution to offer this kind of instruction. "I think it's the wave of the future."

For complete details, contact Kari at NTU at 303/484-6050.

—Kathy Baird

Computer Guardian

Rolling Meadows, Ill., a town *Time* magazine recently characterized as "Heaven on Earth," has teamed with Illinois Bell to make life safer for older and disabled residents.

The town's police computer automatically dials numbers on a "hot list." Call recipients need only enter a two-digit code to assure the computer that all is well. Should the computer not receive an answer, it redials in a few minutes.

If there is no response to a third call, a police operator is notified. Simultaneously, the computer prints information about the resident being called. Should the operator be unable to contact the resident with a fourth call, an ambulance and patrol car are dispatched.

Time's "Heaven on Earth" characterization came about because Rolling Meadows, home of Western-Electric's administrative offices, levies no taxes on its residents. Each Western-Electric telephone sold within the United States is billed from the Rolling Meadows location, and the town levies a sales tax on each one. The continuing tax windfall for the town allows residents to enjoy a full range of free municipal services and still be the recipients of innovative technology.

More information is available from Illinois Bell at 312/727-9411.

—James Moran

Making Waves

As yachting experts analyze the outcome of last year's America's Cup competition, they are finding that the race no longer merely pits one sailor's skills on the high seas against another's. High technology has become a vital part of the competition.

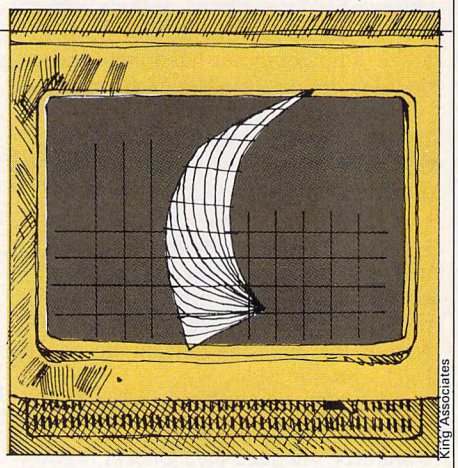
In the 1988 race, the "Stars and Stripes" and "New Zealand" yachts were both outfitted with Hewlett-Packard computers, making them the world's fastest and most technologically advanced catamaran and monohull in the world.

Although the race was won handily by the Americans, the clash was seen by many as a high-tech preview of coming America's Cup attractions.

Both teams spent $500,000 on computers for yacht design, on-board systems, shore-based development and analysis systems as well as equipment for workshops, business and public information offices.

The US crew used a compact HP-71 hand-held computer on board the catamaran for course navigation. The New Zealand team employed three on-board H-P computers, believed to be the most computer power ever carried by an America's Cup yacht.

The New Zealanders used the machines to monitor the shape and twist of the sails for optimum performance, to create a rig-analysis system that collected information from 140 strain gauges located throughout the mast,



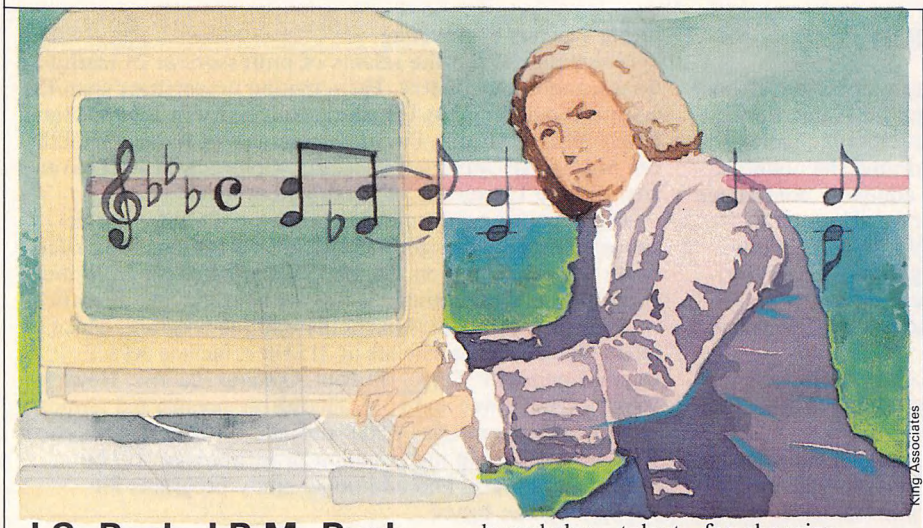
rigging and hull as well as to control a performance-evaluation system and a tactical-navigation system. However, all of this computer power was not used to automatically control anything on either yacht; the computers simply provided information that sailors used to plot their courses.

Designers from both teams believe that the day of the traditional America's Cup 12-meter sailboat race is over and that an entirely new class of racing yachts, produced with computer-aided design, will emerge.

For information on the Hewlett-Packard computers used in the 1988 America's Cup race, contact Hewlett-Packard, 3000 Hanover St., Palo Alto, CA 94304; 415/857-1501.

To learn more about sailing, join the Sailing Forum (GO SAILING).

—Cathryn Conroy



J.S. Bach, I.B.M. Bach Music in Harmony

Music conservatories around the world require their students to compose chorale harmonizations in the style of Johann Sebastian Bach. Now an IBM mainframe computer has joined these budding composers and performers.

Kemal Ebcioglu, who works at IBM's Thomas J. Watson Research Center in Yorktown Heights, N.Y., has created Choral, a program that adds bass, tenor and alto parts to existing soprano melodies in much the same way Bach practiced the art. Ebcioglu notes that, although other computer programs can compose music, his software is the only one that duplicates the Bach chorale style.

Ebcioglu, who holds a master's degree in music and a doctorate in computer science, says Choral follows more than 350 compositional rules. A chorale harmonization of 20 bars requires about 30 minutes of computing time on an IBM 3090 series mainframe computer and 23 billion instructions. Because of its huge computing power appetite and limited usefulness, IBM does not intend to commercially market Choral.

The program builds a harmonization in stages. It can backtrack and changes notes when a problem is encountered. In that way, says Ebcioglu, it resembles an animal negotiating a maze.

Ebcioglu says Bach's chorale style was relatively easy to replicate because it is well understood. He believes other natural candidates for expert systems programs include Antonio Vivaldi and Franz Joseph Haydn.

"Compositional rules by themselves cannot produce beautiful music," says Ebcioglu. "Composers use additional knowledge—talent—for choosing among the many theoretically possible extensions of a particular composition." However, Ebcioglu believes Choral would probably receive an above-average to excellent grade in a college music composition class.

"It is unknown to what degree we can replicate human creativity by a computer. But what we can do is impose much higher standards on computer-created music," says Ebcioglu.

For more details on Choral, contact IBM's Thomas J. Watson Research Center at 914/945-3000.

CompuServe users with interests in computer music can converse with fellow enthusiasts in the MCS MIDI Music Forum (GO MIDI).

—John Edwards

Get Computer Industry News

Online Today Daily Edition's Monitor section keeps you abreast of the latest computer and information industry news. Stories are added several times each day and the hot items are highlighted on our front page, OLT-1. A week's worth of recent news is always available for review (OLT-20). To read today's news, type GO OLT-90 at any CompuServe Information Service prompt.

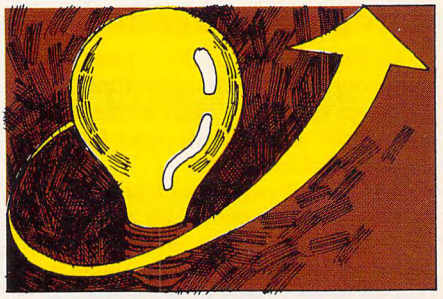
***MONITOR DAILY NEWS**	**OLT-160**
About Monitor	**OLT-359**
Behind the Screens	**OLT-130**
Headlines	**OLT-1**
Recent News	**OLT-20**
Reporting News to Us	**OLT-352**
Special Reports	**OLT-2000**
Today's News	**OLT-90**

Picking Up the Pace

The US government wants American industry to take its rightful place in producing and marketing high-tech ideas and has issued a report called *Picking up the Pace: The Commercial Challenge to American Innovation*. The focus of the report, which was written by the Council on Competitiveness, is to answer the question, "How can the government create an environment that is more conducive to the rapid commercialization of technology by the private sector?"

The report states that "facilitating US private sector efforts to move ideas from the laboratory to the marketplace should be a top national priority. America's future competitiveness and standard of living depend on it."

The report acknowledged that the speed with which firms are able to translate innovations into commercial products and processes often spells the difference between success and failure.



Specific recommendations made by the report include:

- Improving the economic environment affecting the private sector's ability to develop and apply technology, including a supportive fiscal policy and a stronger US trade policy.
- Improving the machinery for making technological policy, perhaps through a presidential assistant responsible for science and technology.
- Increasing the federal government's investment in education, facilities and other equipment that make up the nation's technological infrastructure.
- Widening the focus of national research-and-development efforts.

Copies of the report can be ordered from the US Government Printing Office online in Government Publications (GO GPO) or by writing to the Superintendent of Documents, US Government Printing Office, Washington, DC 20402.

—Cathryn Conroy

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- **Enroll today** Sign on to CompuServe and enter **GO SAC** to have full membership privileges for 3 months for just $1. Then, unless you notify us, we will continue your membership and bill you for the low annual fee of $30. And, of course, you can cancel and receive a full refund at any time during the first year.

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How to Get the Most Out of CompuServe

Computer Magic: Multi-talented Machines

by Charles Bowen and David Peyton

A computer's magic is that it is many kinds of machines in one.

In the online community, the computer is a communication machine. But the same hardware can tackle assorted tasks, from games to spreadsheets, simulations and scientific modeling, from balancing the checkbook to finding new prime numbers. And one of its most powerful functions is the simplest concept: the data dump truck.

Usually, we think of communicating with CompuServe in a straightforward way: We type our thoughts on the keyboard, and CompuServe displays its messages on the screen. However, sometimes you want to communicate in other ways: from your disk to CompuServe and from CompuServe to your disk.

In other words, you have information stored on a disk that you want to send (*upload*) to the system for someone else to retrieve. And you find files in CompuServe's various areas that you want to retrieve (*download*) and store on a disk for later use.

These terms are confusing to some newcomers. Uploading simply means sending something from your computer into the computers at CompuServe; downloading means taking something from CompuServe and storing it on your computer. These ideas represent a special, more intimate kind of communication with CompuServe that depends largely on your communications software.

If you are new to file transfer, you should consult your communications program's manual for how it handles uploading and downloading. Learn the specific command sequences for those operations and determine what file transfer *protocols* (sometimes called "error-checking protocols" or "binary file-transfer protocols") it supports.

A protocol is a set of rules that allows computers to send and receive data without errors caused by static on the phone lines. When using a protocol, computers carry on a "conversation" during the file transfer, periodically checking to see if the data received is identical to what was sent. Here's how:

The computer sending the file (CompuServe when you are downloading; your computer when you are uploading) transmits a certain amount of data called a *block* and the receiver catches it.

Each does a calculation. The sending computer analyzes the digital representations of the block and comes up with a number called a *checksum*. The other does the same calculation on the block it has received. They then compare checksums. The only way the two numbers can match is if exactly the same block was received as was sent.

If the checksums don't match, the block received is thrown away and they try again. If the checksums do match, the receiver saves the block on the disk and prepares to receive the next transmission. The procedure continues until the entire file has been sent and confirmed.

One difference among various transfer protocols is the size of that block of information passed between the two computers. Some protocols send blocks of 256 bytes of data before comparing checksums, while others use larger or smaller blocks. Because of the different block sizes, it is essential that both the sending and receiving computers use the same protocol during a transfer.

CompuServe offers several different transfer protocols, so check the manual to see if your terminal software also supports any of these:

- CompuServe's B Protocol and Quick B Protocol were developed specifically for CompuServe and included in a number of communications programs, such as CompuServe's own Professional Connection packages, CompuServe's VIDTEX (for Apple IIe, Tandy Color Computer and Commodore computers), Crosstalk Mk.4, Lotus Symphony 1.2, ProComm and others. A few terminal programs still support CompuServe's older A Protocol (which still is listed on some system menus), but their numbers are dwindling.
- XMODEM (also called MODEM7) is a well-known public-domain protocol developed in the late 1970s by Ward Christensen of Chicago. If your communications program supports only one transfer protocol, chances are that it is XMODEM. However, each program may support a slightly different version. For instance, in some parts of CompuServe a "Macintosh XMODEM" is listed on protocol menus, indicating an XMODEM installation for the Apple Macintosh computer.
- Kermit is a newer file-transfer protocol developed at Columbia University that is becoming increasing popular in communications software.

Suppose that in a forum library you find a program called BBALL.BAS, which you want to download to use offline. There are several ways to tell CompuServe about it. You can enter a digit at a menu and, when prompted, enter the file's name; or at the library's main prompt, you can type DOW followed by the file name (DOW BBALL.BAS).

After that, the next prompt usually is a menu at which you specify the protocol you wish to use:

```
*******************************
Protocol Menu
Transfer protocols available -
  1 XMODEM (MODEM7) protocol
  2 CompuServe 'B' protocol
  3 CompuServe 'A' protocol
  4 DC4/DC2 CAPTURE protocol
  5 Kermit protocol
  6 CompuServe Quick 'B' protocol
  0 Abort transfer request
Enter choice !
*******************************
```

You already should know the ins and outs of your communications software and what protocols it offers, so all you have to do now is enter a number to tell CompuServe which protocol to use.

If you are using one of CompuServe's own terminal programs, such as The Professional Connection, VIDTEX or Navigator for the Macintosh, the system might not display this menu of transfer protocol selections. Instead, if the system already has recognized your communications program as one of its own, CompuServe may automatically select B or Quick B protocol and initiate the transfer for you.

In other cases, you will need to indicate your preferred transfer protocol yourself with a selection from the menu. The system then prompts you to initiate the transfer by entering the appropriate commands for your software. It is here that you need to have done your homework by studying your software's manual. If the manual tells you that your program supports the XMODEM protocol, you could select Option 1 from this menu. Then, when prompted, initiate the download with

whatever command sequences your software requires for an XMODEM transfer.

Most communications programs pause before the transfer begins to prompt you for the name you want to assign the file as it arrives on your disk. This does not have to be the same name as exists online. While the file in our example is called BBALL.BAS, you can call it anything you like on your disk, as long as it is a legal file name for your computer. (Also, if you have a hard disk and use directories and subdirectories to organize it, be sure to enter the full pathway name when specifying the file name.)

Now the actual download begins. CompuServe sends data and your machine captures it, comparing checksums to verify what is received and then saving it on your disk. With some communications software, the screen displays numbers and plus signs during the download, something like:

```
**********************************
1+++++++2+++++++3
+++++++4+++++ etc.
**********************************
```

This is to assure you that the transfer is continuing properly. Other terminal programs do not display this string of numbers and symbols, but rather offer their own screen displays to report the progress of the file transfer. See your manual for specifics.

After the download is completed—the file has been transmitted from CompuServe, confirmed and saved on your disk under the name you specified—the system notifies you. If you download a second file at this point, the system does not prompt you to choose a transfer protocol; it skips that menu, assuming that you are using the same protocol you used on the first transfer.

The File Transfer menu has another option. "DC4/DC2 CAPTURE" (Option 4 in our example) is *not* an error-checking protocol, meaning it does not perform the comparing of checksums that characterizes B and Quick B Protocol, XMODEM and Kermit. Instead, DC4/DC2, sometimes called an ASCII transfer, is simply an ASCII display of the file. Some communications programs have what is called an "ASCII dump" or a "buffer capture." You can use this option for such capturing. However, DC4/DC2 should be used only for capturing *text* files, where occasional static on the phone number usually can do no more than garble a few characters. Program files always should be downloaded or uploaded only with an error-checking protocol to protect against noisy phone lines.

Next month, we will look at making deliveries with the data dump truck—the lowdown on the upload.

Charles Bowen and David Peyton co-authored How to Get the Most Out of CompuServe *and* CompuServe for IBM PC Power Users. *Bowen's CompuServe User ID number is 70007,411. Peyton's is 76703,244.*

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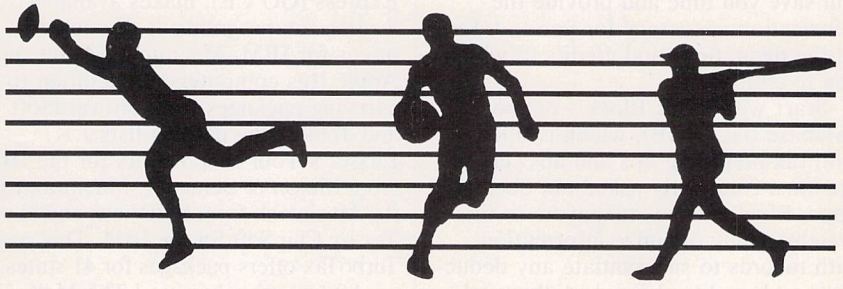

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Just-in-Time Tax Tips

Online Resources Reduce Stress of Inevitable 'Date' with IRS

by Mike Pietruk

With only a couple of months remaining until the dreaded April 15 tax-filing deadline, Americans' mailboxes are quickly filling up with W2s, 1099s and other financial statements. Many people adopt the "out of sight, out of mind" philosophy and toss the forms in a drawer, wishing that the inevitable "date" with the IRS would go away.

Although CompuServe may not be able to make tax time pleasurable, it *can* provide a variety of services that will save you time and provide the information necessary for you to take all the deductions and credits to which you're entitled.

Start with H&R Block's online database (GO HRB), which is filled with tax-preparing tips and answers to the most frequently asked tax questions. Block advises taxpayers to first systematically organize information, with records to substantiate any deductions and credits claimed. A thorough search through your check register, receipts and documents could uncover hidden deductions you may have overlooked.

Look for such items as insurance premiums, payments for medical services, interest on loans (only 40 percent of consumer interest is deductible for 1988), cost of child care while you work and contributions to an IRA or Keogh retirement plan. Likewise, make sure that you have information about all income received or earned during 1988, including wages and salaries (don't forget such things as fees for jury duty, election poll work and hobbies), interest and dividends, and other forms of miscellaneous income such as alimony and unemployment compensation.

Keep in mind that this represents only a partial listing. Because tax reform has reduced the number of deductions and credits available, it is more critical than ever to know which ones remain. These are outlined in the Tax Tips and Questions and Answers sections of the HRB database.

Another source for tax information is The Electronic Mall, which features merchants offering software for tax preparation. Investment Software (GO IS) offers a range of investment-related programs for IBM computers and a special selection for the Macintosh. IS makes available Best Program's PC/TaxCut, HowardSoft's California Supplement, HowardSoft's Tax Preparer: Partnership, Best Program's PC/Professional Finance Program, and programs by Andrew Tobias—Managing Your Money and Personal Tax Filer.

Software Discounters of America (GO SDA) has a variety of tax and financial packages for IBM, Apple, Atari and Commodore computers. Among the offerings are popular programs from Tobias and Sylvia Porter.

Another Mall merchant, Computer Express (GO CE), makes available leading tax programs at discounted prices for IBM, Macintosh, Apple and Apple IIgs computers. In addition to carrying packages from HowardSoft and Tobias, the catalog lists J.K. Lasser's Your Income Tax for the IBM from Simon & Schuster, Macintax for the Macintosh from SoftView, and TurboTax by ChipSoft for the IBM. This year, TurboTax offers packages for 41 states.

After you've browsed The Mall, take a look at the Investors' Forum (GO INVFORUM). In Library 7, you will find a variety of public-domain software and informational textfiles. An example of the former is TAXPLN.ARC, a comprehensive tax-planning guide written for IBM PC and compatibles.

In another file, 401K.TXT, forum member Jim Dexter reviews the tax consequences of the popular 401(k) retirement plans established by many employers. If you are not sure if your IRA contribution for 1988 is deductible, IRA.TXT has the answer. This textfile details how the current tax laws affect contributions to new or existing IRAs depending on your adjusted gross income or your participation in an employee pension plan. A Quick Test determines the deductibility of your contribution made prior to April 15 or the date you file your return, whichever is earlier.

If you still have unanswered questions, the Investors' Forum can come to the rescue. By posting a question in Section 7 of the message board, you can tap the expertise of accountants, lawyers and others who are willing to lend a hand. Make your question as detailed and specific as possible, and check for replies within a couple of days.

Finally, it is not too early to start getting ready for 1989. Block has available, free for the asking, six books created to facilitate tax recordkeeping for both individuals and businesses. Each is described in the H&R Block database (GO HRB) and may be obtained by calling or visiting any local Block office.

New QUOTES Command Improves Stock Savvy

by J. David Edwards

In today's volatile environment, it's more important than ever to keep a close watch on investments. Day to day, even hour to hour, events can shake the financial marketplace and the value of the stocks traded there.

CompuServe has always recognized this. When "Black Monday" pounded domestic exchanges in 1987 with the steepest one-day price declines in history, CompuServe, under the heat of record trading volumes, provided subscribers with uninterrupted pricing information.

In keeping with that tradition, CompuServe has added a new resource that puts subscribers in fast touch with their investments without leaving the product or service they are currently viewing. The QUOTE command is a powerful tool that retrieves current pricing information on stocks, options and market indicators from any prompt on the Information Service.

For example, imagine you are logged into the Executive News Service reading a late-breaking financial story about Kraft, whose stock you own. Immediately you begin to wonder how its stock has been affected by the news.

Before the QUOTE command was instituted, to check stock quotes you had to navigate out of ENS and into the Quick Quotes database (GO QQUOTE). Now, all you need to do is type QUOTE KRA (the ticker symbol for Kraft) for a concise display of the day's most recent (or closing) quote.

Because the QUOTE command is an in-context feature, you do not have to leave the service you are viewing (in this case ENS). Instead, the information is displayed at the bottom of your screen and includes the ticker symbol, latest price, change from yesterday's close, time of the quote and the number of shares sold for each issue requested.

Suppose you're in the Investors'

Mutual Funds Yield Diversification

by Mike Pietruk

Novice and experienced investors seeking to participate in the stock, bond or money markets are increasingly turning to mutual funds. These popular, professionally managed investment vehicles provide portfolio diversification that would otherwise be difficult to attain.

They may be aggressive or conservative, risky or virtually risk-free, depending on the fund chosen. Many offer attractive programs, including reduced minimum contributions for IRA and Keogh retirement plans. As investors' interests grow more specialized, mutual funds are expanding to meet these needs.

A mutual fund is a company that pools the money of many investors—its shareholders—to invest in a diversified portfolio of securities. Investments can be in stocks, bonds, money market instruments or some combination of these. Different types of funds invest in different types or mixes of securities.

Every mutual fund pursues a stated investment objective, such as growth of capital, safety of principal, current income or tax-exempt income. By carefully defining your investment goals and choosing funds that match them, you can pool your assets with those of like-minded investors. Along with these shareholders, you participate in all the gains, and possible losses, experienced by the fund's portfolio.

Fees charged to shareholders vary according to the fund. Typically, funds are described as either carrying a load (commission or sales charge, which may be as high as 8.5 percent of monies invested) or as being no-load funds. Additionally, all mutual funds, load and no-load, charge management fees—generally between .5 percent and 1 percent of monies invested. An increasing number of funds impose back-end charges that are collected when you sell your shares. All these are fully disclosed in the fund's prospectus, the official sales document you must receive prior to investing.

Not surprisingly, more attention is being focused on the no-load funds. The No-Load Mutual Fund Association, the industry's marketing arm, maintains a database of information on the no-load and low-load (less than 3 percent or so) funds. Accessed by typing GO NOLOAD, the menu-driven directory permits scanning for funds that meet your specific investment objectives and offer the services and features you desire. A glossary of mutual fund terms is provided along with addresses and, in many instances, toll-free numbers you can call to receive further information. If you prefer, you can order a prospectus while online by selecting Option 6 from the No-Load Mutual Fund Directory's main menu.

Once you come up with a list of funds that potentially meet your needs, you will want to do additional research. Begin by getting ticker symbols from the Name/Symbol Lookup (GO LOOKUP) database. Simple to use, the database lists CompuServe symbols for funds you specify along with their CUSIP number and a description of each issue.

From Name/Symbol Lookup's main "search by" menu, select Option 1. Type all or a portion of the fund's name to receive the requested tickers. If there are too many issues for one screen to display, a menu will identify the number of issues found, broken down by security type. Select Option 5, "Mutual Funds," which offers you the choice to list the issues found or to narrow your search.

Once you have these, you are set to go to work. While past performance is no guarantee as to the future, it at least may offer a clue. Return Analysis (GO RETURN) enables you to compare fund performances against one another or any other security or index over any desired time frame.

Historical prices from as far back as the mid-1970s are available in Single Issue Historical Pricing (GO PRICES), and daily closing prices (net asset values) are in Current Day Quotes (GO QQUOTES).

Mutual funds regularly pay dividends and other distributions to shareholders. This data, valuable for analysis and tax recordkeeping, is listed in the Dividends, Splits, Interest service (GO DIVIDENDS).

It has been said that a picture is worth a thousand words. If your terminal and communications software can support graphics, you can create price/volume charts for any fund by typing GO TREND. The program provides a "snapshot" analysis of a fund's performance over a period of days, weeks or months.

Two TREND commands are specifically designed to aid in mutual fund analysis. The /MUTADJ command enables you to adjust the graph for cash distributions for mutual funds only (which is helpful when mutual funds and regular stocks are requested at the same time, as when using a ticker input file). The /ALLADJ command adjusts for both stock and cash distributions for all types of issues (including mutual funds).

Mike Pietruk is a forum administrator of CompuServe's Investors' Forum and an assistant vice president of Preferred Savings & Loan in Chicago. His CompuServe User ID number is 76703,4346.

Forum where you read a message thread discussing three stocks that were new to you. By typing QUOTE followed by the ticker symbols for the three stocks, each separated by a comma, you can see how the price might have changed since the thread was written.

Portfolio Evaluation (GO PORT) is another area in which quick access to current quotes will prove invaluable. Portfolio Evaluation retrieves securities quotes on multiple issues. In the past, the prices displayed in this product were for the previous day. Now, thanks to the addition of current quotes, you can see an accurate picture of what your portfolio is worth at any given moment throughout the trading day.

The cost is seven cents per quote while the Big Board is open (until 4 p.m. EST) and two cents for all closing quotes. Now keeping on top of your stocks—no matter what CompuServe product or service you use—will cost only pennies a day.

Business Briefs

Analysts Up Earnings Estimates

Wall Street analysts raised earnings expectations for 1988 and 1989 in the wake of better-than-expected quarterly earnings, according to the Institutional Brokers Estimate System.

With the one-year anniversary of Black Monday behind, many investors will find it appropriate to go back and check consensus earnings estimates of their favorite stocks. I/B/E/S is an Executive Option service. GO IBES

Business Account Fee Reduced

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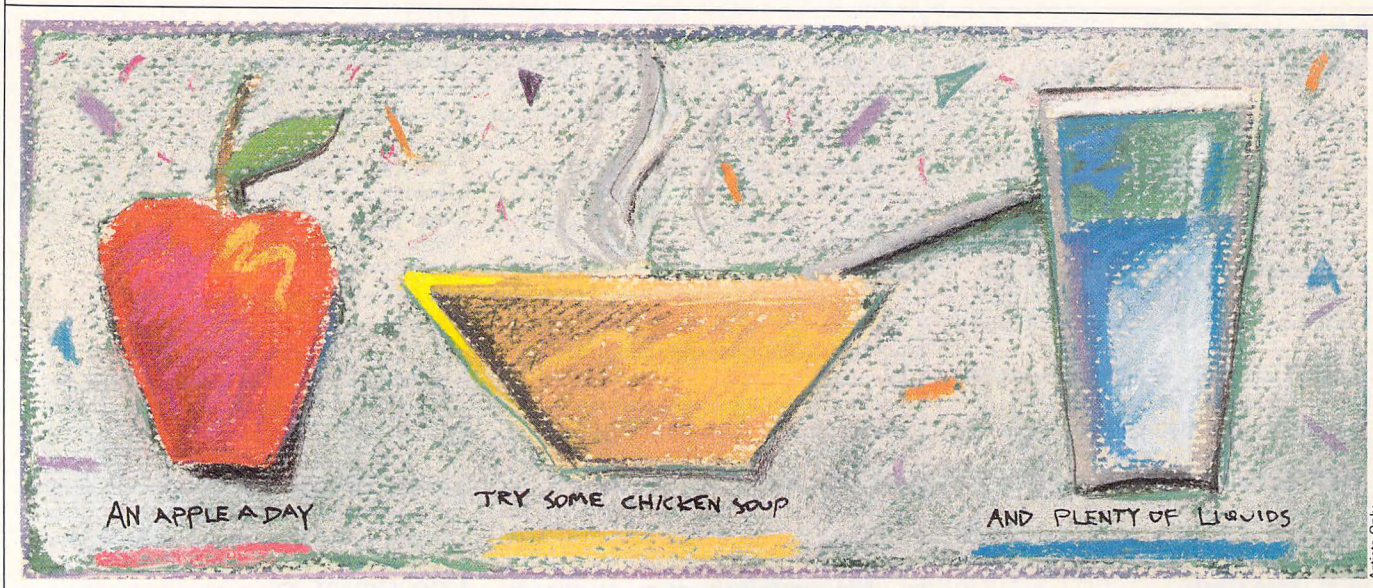


To Your Health

How to Research Medical Advances, Stalk Diseases

by Cathryn Conroy

If it's winter, then it's almost a sure bet that one of my three children has a cold. Colds, especially in families with children, are just a part of the season.

But colds can lead to more serious illnesses, such as strep throat and ear infections. Even if they don't, they can make you feel miserable. Are there new remedies or ways to avoid the dreaded childhood ear infection that invariably follows an infant's cold?

I took this question to the experts—my pediatrician and CompuServe. As with any medical query, you'll want to consult your physician, but researching the latest medical advances yourself is also an option with the sophisticated consumer health-care databases available online.

A good place to begin any consumer health search is HealthNet (GO HNT). HealthNet is an original, comprehensive online home medical reference source, written and updated by a team of licensed, board-certified physicians in concise, easy-to-understand language. HealthNet consists of four basic areas: newsletters, sports medicine, HouseCalls (which includes answers to frequently asked questions by HealthNet users) and the reference library.

In the reference library, you will find answers to many of your health questions. It is an excellent place to begin a medical search, because here you can "translate" your health question into medical terms that the other, more sophisticated databases will understand. (For instance, "ear infection" can also be researched as "otitis media.")

The Reference Library is divided into eight main subject areas, including diseases and disorders, drugs, obstetrics and ophthalmology. Choose the one that most closely defines your question. I was looking for information on the common cold and ear infections, so I selected "Disorders and Diseases."

Another menu (in two parts) further narrows the search, and I selected "Infections." To determine where your disorder belongs or to find the proper medical term for a disorder, the Index to Diseases is an alphabetical listing of diseases that gives the menu code for hundreds of ailments, from diaper rash to cancer. For example, the term "otitis" guided me to the "upper respiratory" menu choice on the "Infections" menu.

Information presented includes a basic description of the disease, diagnosis, treatment, prevention and complications. The reference library can also be searched by symptoms and drugs.

From HealthNet your search could continue in *Grolier's Academic American Encyclopedia* (GO AAE). Although there is no hourly surcharge for this service, it requires a subscription fee, ranging from $7.50 for one month to $49.95 for one year.

Searching *Grolier's* is easy. You enter your search term or phrase and receive a list of all articles matching that term or phrase.

If you do not find information on your first search, however, try other variations of your phrase. For instance, I typed COMMON COLD and was told there were no articles matching that phrase. But when I typed in COLD, COMMON (which was the term I found in HealthNet), I was given a descriptive article on the topic.

Grolier's is a full-text source. Each article is followed by a bibliography, which can lead you to additional sources that can be located in a public library. In addition, *Grolier's* will direct you to related articles, with "see also" sections at the end of most articles, and to related topics, identified in capital letters, throughout the body of the article. For example, in the article on eye diseases, I was able to determine that *Grolier's* had specific articles on blepharitis, staphylococcus, conjunctivitus and trachoma, among others.

For those who want information directly from the professional medical literature, the next step should be a search in PaperChase (GO PCH), an easy-to-use version of the National Library of Medicine's prestigious database MEDLINE. PaperChase contains more than 5 million references from 4,000 journals with 25,000 references added each month. The system is designed for use by the consumer as well as the medical professional.

PaperChase asks questions and offers you a choice of answers. By following the thorough instructions provided during the search, you'll come

away with exactly what you are looking for at a reasonable cost. (PaperChase surcharges are $18 an hour from 7 p.m. to 8 a.m. local time and $24 an hour from 8 a.m. to 7 p.m. local time.) If you have questions, PaperChase offers a toll-free help line weekdays from 8:30 a.m. to 7 p.m. EST at 800/722-2075.

At the Look For prompt, I typed COLD, COMMON and was informed there were 961 references. I decided to focus my search more precisely, so I added another search term: REMEDIES. This produced 295 references, and when the lists were combined, I was given 11 pertinent references. I then conducted another search, asking PaperChase to look for OTITIS MEDIA. When combined with the common cold list, this produced more than 50 references. I narrowed it further to exactly what I wanted—ear infections in babies with colds—by adding the search term INFANT.

When you exit PaperChase, the system will tell you how long you were on and the exact surcharge. (I searched at the higher morning rate for 15 minutes with a surcharge of $6.49.)

The next stop is IQuest (GO IQUEST), a massive database service that serves as a gateway to more than 850 databases spanning business, government, research, news, popular entertainment, sports and medicine.

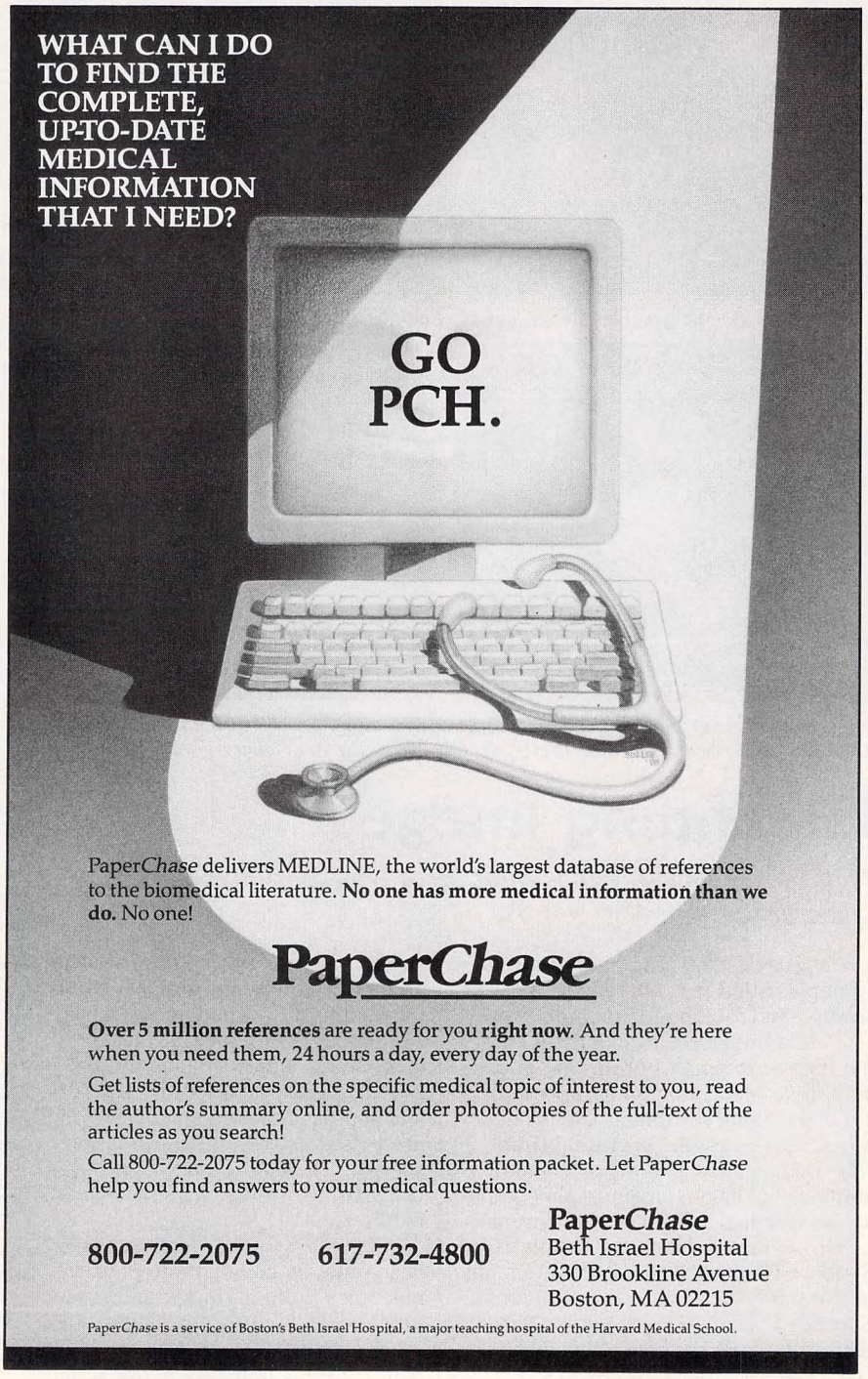
If you don't have a specific database in mind that you want to consult, the easiest and most efficient way to begin conducting an IQuest search is through SmartSCAN. One of the SmartSCANs is MEDICINE, which offers four areas of medicine to scan—medical research, pharmacology, nursing/allied services and consumer health. I chose medical research for my search. Because IQuest will not accept a comma in the search phrase, I changed COLD, COMMON to COMMON COLD. The terms I used were COMMON COLD AND OTITIS. The SmartSCAN revealed that six, out of more than 20 medically oriented databases, were likely to be most relevant to my search.

If you need help, type SOS and take advantage of a professional librarian's expertise in defining your keywords and selecting appropriate databases.

IQuest surcharges are based, not on the amount of time you spend, but on the databases searched and the information retrieved. The charge for each search and each resulting database is $9. In addition, some databases assess extra charges.

Finally, if you want some free information, check out Information USA (GO INFOUSA) for a list of free government publications on a myriad of health concerns. The US government spends billions of dollars researching every conceivable illness and ailment, and that information is available to you. In addition, you can receive technical assistance for your specific health problem just by asking. The health information in this database is found under Option 6, "Free Help for You/Your Family" and then on the second menu, Option 8, "Health Matters."

Cathryn Conroy is a contributing editor of Online Today *based in the Washington, DC area. Her CompuServe User ID number is 70007,417.*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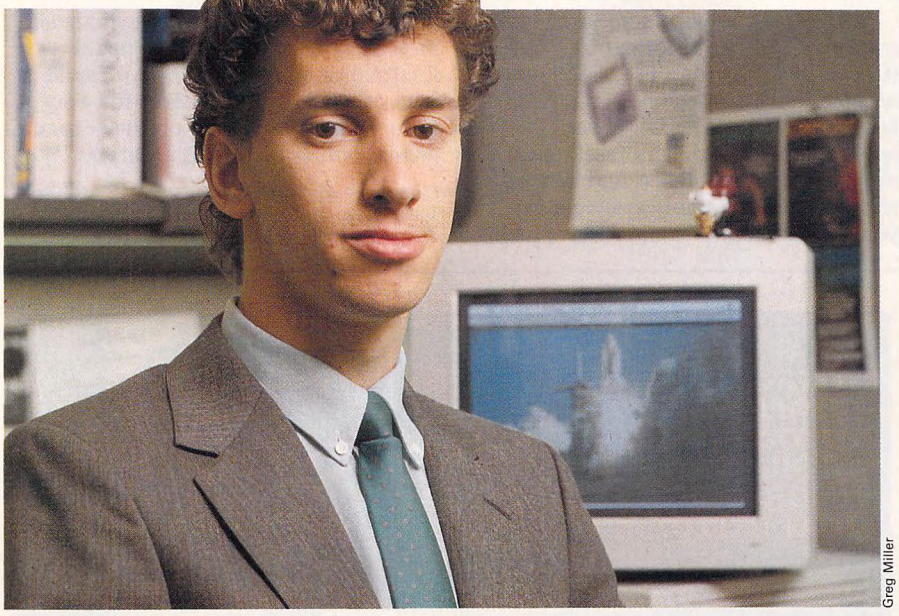

Greg Miller

Addressing specific graphics users' needs: *Sutliff*

GIF standards make high-quality photographs, designs possible: *Shuttle photograph (COMING.GIF) and illustration (SHUTTL.GIF) from the Art Gallery Forum's Library 10.*

Expanding Images

Picture Support Develops into Three New Forums

by Dan Janal

Picture this: A CompuServe forum so popular that it is bursting at the seams—and looking for room to grow.

That's the latest development from the Picture Support Forum, the information service's home for support of popular graphics formats. Due to its popularity—growth generating from GIF's emergence as a major computer graphics industry standard—this graphics service has split into three forums.

Of the new forums, the Graphic Support Forum (GO PICS) offers many of the same services as the old Picture Support Forum, such as advice, general discussions, and discussion of GIF-related hardware and software support issues. Two additional forums are holding areas and support centers for picture files. The Quick Picture Forum (GO QPICS) stores low- and medium-resolution graphic images, provides discussion for specific files, and supports the reading of GIF files used elsewhere on the information service. The Art Gallery Forum (GO GALLERY) stores and supports GIF pictures.

"The new forums have increased user value by adding more physical resources, both hardware and personnel, and adding broader ranges of libraries and discussion sections," says Alec Sutliff, CompuServe marketing manager. "They also will better serve specific graphics users' needs by better defining where they need to go to retrieve specific types of information and files."

Here is a brief overview of the three new forums:

The Graphic Support Forum provides CompuServe members with a one-stop forum addressing major graphics topics. New graphics concepts are addressed in detail, allowing forum members to more efficiently track the future of graphics and to make better purchasing decisions.

"The Graphic Support Forum user will benefit from the split mainly in the area of expanded services," says Larry Wood, forum administrator. New concepts will be explored, including scanners and digitizers, computer graphics presentation, graphics in desktop publishing, video boards and paint programs.

"We will also offer forum members direct access to major players in the graphics industry—software designers, hardware manufacturers, artists, technical support personnel and others."

The Graphic Support forum covers such topics as graphic publications, paint programs, video boards, scanner digitizers, GIF encoders/decoders, GIF animation, computer animation, artists, desktop publishing and clip art.

The Quick Picture Forum, created to support users who have low-end machines and those users reading a lot of files online, offers a large library of graphic images that are small in file size and amount of color. It provides low-end computer users with a more efficient forum environment that is geared specifically toward their needs. Requirements for files in the libraries are that they are less than 20K in size and have 16 colors or less.

"The Quick Picture Forum, with its low resolution and small-sized files, offers users a library environment with the type of images that will continually grow in popularity as more online products incorporate GIF images into their product offerings," says Wood.

"The Quick Picture Forum will see an increase in user benefits, primarily due to the consolidation of GIF images that all machines will be able to view with equal clarity," he says. "Also, because of the smaller forum size, more images can be stored and accessed with considerably less difficulty than usually associated with heavy user load."

The Quick Picture Forum covers support for subscribers who are trying

to read or download online graphics, such as weather maps, used on other areas of CompuServe.

The Art Gallery Forum offers graphic images that are pushing the current upper limits of resolution, file size and artistic abilities. "The Art Gallery Forum will appeal to high-end graphic users who are primarily interested in larger resolution image files," Wood says. "Usually, this type of user is primarily interested in files with as many colors as possible." With GIF, this would be 256 on-screen colors at a time.

All users will benefit from a better system response due to a workload distributed into three areas. The Picture Support Forum staff uses a team concept, which allows each member of the staff to focus on one area of forum operation as his or her specialty and assist in other areas as needed.

"The split will permit staff members to more fully develop their own areas of expertise while giving more attention and support to end users," Wood says. "This is important in graphics because more users need one-on-one attention to get started."

Software and hardware developers also will gain from the new forum structure. "The informal atmosphere of the forum provides invaluable input to both ends of the industry spectrum," says Wood. "It allows hardware and software developers to see what users want as enhancements to existing products. It also provides a testing ground where users can participate in the testing of new ideas and concepts as well as the actual software."

Benefits can be seen for all levels of CompuServe users. Low-end machine users can access a forum library dedicated to images that display well on their machine. High-end machine users have a forum dedicated to the advancement of high-resolution graphics in the online environment as well as offline. And all users benefit from a speedier response due to smaller forum size.

"The new forums offer a larger selection of files, a variety of specific subject areas throughout the three forums, access to developers and commercial vendors who are active in the field of graphics processing, especially as it relates to the GIF standard, as well as a very responsive forum staff," says Sutliff.

Dan Janal is president of Legal Computing Systems, a training and consulting firm in Fort Lee, N.J. His CompuServe User ID number is 76004,1046.

Computer Clubbers 'Never Say Die'

by Joe Noethlich

In these times of rapid change, technological innovations frequently cause existing computer hardware to be labeled obsolete. However, CompuServe's Computer Club Forum (GO CLUB) provides refuge to users who can no longer easily obtain support from a hardware manufacturer.

CP/M Kaypro users recently found themselves in this position. "The CP/M Kaypro is a computer with rapidly dwindling manufacturer support," says Dave Yaros, primary administrator of the Computer Club Forum.

Recently the Kaypro Forum moved to Yaros' forum and members now communicate with each other in specific sections and libraries within the Computer Club Forum. As members of this forum, Kaypro users can mingle with other hardware users who have found creative, successful ways to overcome restraints imposed by waning support from manufacturers. Message board Sections 15 and 16 and Libraries 15 and 16 of the Computer Club Forum are dedicated exclusively to Kaypro.

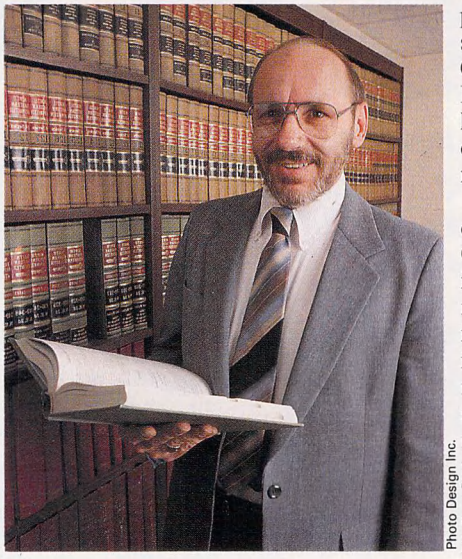

Photo Design Inc.

Computer Club leader: *Yaros*

Similarly, the Computer Club Forum provides a safe harbor for other members who use a variety of computer hardware. "The Computer Club Forum is where many current hardware forums, such as the Texas Instruments Forum, had their beginning," Yaros says.

The Computer Club Forum has thousands of members, and its libraries contain more than 2,000 files. It is home for users of hardware manufactured by Actrix, ADAM, Amstrad, Apricot, Eagle, OSI, Panasonic, Sanyo, Timex/Sinclair, QL and Victor.

The forum administrators are Tim Nunes (ADAM), Rob Friedman (ADAM CP/M), Irv Hoff (Kaypro), Rick Trethewey (OSI), Greg Smith (Panasonic), Jon Jacobs (Sanyo) and Dave Rothman (Timex/Sinclair and QL). Yaros is the administrator to contact about Eagle hardware.

There are no administrators for Actrix, Amstrad, Apricot, and Victor hardware, but Tom Purczycki informally leads the Amstrad section and Alan Thibideau informally leads the Apricot section.

The type of support members of the Computer Club Forum request most often is specific to particular hardware and its related software and peripherals. This can include questions about parts, repairs and use.

"Given the lack of manufacturer support, documentation is a vital need for abandoned users," Yaros says. He credits forum members with creating and providing much of this documentation. Each library contains much hardware-specific, public-domain software, and the Computer Club Forum holds hardware-specific conferences on a regular basis.

"The substance of the Computer Club Forum is that it is driven and maintained by the interest and participation of its members," he says. "They determine what it is and what it should be." The result is a group of people interested in experimenting and sharing their experiences.

"These 'mature users,' as we like to call them, like to push their silicon to the limit in terms of accessing its capabilities," Yaros says. Several messages displayed in the Timex/Sinclair section may illustrate this best. The messages discussed possibilities for using Timex/Sinclair hardware with robotics—an advanced application for "obsolete" hardware.

"If members of the Computer Club Forum can be characterized at all," Yaros says, "the best description would be one of 'Never say die!' This philosophy drives the forum and keeps alive hardware that is reliable and functional, but no longer state-of-the-art."

"The Computer Club Forum represents precisely what CompuServe's online environment is all about: a dynamic network for people who use personal computers."

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Nantucket's Course: Customer Support

by Michael Houdeshell

Nantucket Corp., the Los Angeles-based developer of the popular Clipper® and McMax database products, recently added a CompuServe forum and an online reference center to its product support.

"Since 1984, when Nantucket first introduced Clipper, new capabilities and increased versatility have changed the very nature of Clipper and the way it is used. In fact, it has set standards in the dBase community since it was first released," says Renee Gentry, a Nantucket product-support specialist and the primary administrator of the Nantucket Forum (GO NANFORUM).

Clipper innovations include user-defined functions, arrays, open architecture and a compiler. It produces executable code that can be run from the DOS prompt and does not require a run-time module. Clipper applications run up to 20 times faster than dBase applications and do not require any licensing fees for distribution.

With more than 80,000 copies on the market and a secure status as the development system and compiler of choice among dBase developers, Clipper is naturally the most frequent topic of discussion in the new forum, and the Clipper Programming section correspondingly bears the most traffic. But given the number of CompuServe subscribers using the Macintosh, the recently introduced McMax program is likely to start closing the gap.

Gentry characterizes McMax as "an interactive relational database management system for the Apple Macintosh computers, similar to what dBase is for the IBM PC and PS/2 machines."

Featuring a program editor, file-creation utilities and debugger, McMax offers the ability to create Macintosh database applications using popular dBase commands as well as converting existing dBase applications from IBM PC to Macintosh formats, without re-entering data or rewriting code.

The forum offers Clipper and McMax users the advantage of direct access to Nantucket's technical support personnel without the customary annual fees for telephone support. Three of the forum administrators are Nantucket staff. While your particular question or comment will probably draw insights from other forum members, the staff monitors all technical questions posed in the forum and reviews advice for accuracy.

Aside from the convenience of online advice, the forum libraries offer programming resources you can obtain nowhere else—even from Nantucket itself, confides Gentry. "In the libraries, we have functions and procedures that were written in the Clipper language," she explains.

Nantucket expects that, although the collection is already impressive, forum users will build on the current base of downloadable Clipper and McMax applications, procedures and programming tools. "This part of the forum serves two purposes: First, it can save developers time so they don't have to reinvent the wheel; and, second, it can show them new techniques and how to use certain features of the product that they might not be aware of," says Gentry.

Although regular weekly conferences are not yet scheduled for the forum, they should soon be in the offing, if interest in the forum itself is any indication of user demand for real-time conferencing.

As a companion to the forum, whose contents vary with the current interests of its users, Nantucket also has worked with CompuServe to create an online clearinghouse of product information. While it is not interactive, the Nantucket Reference Center (GO NANTUCKET) does provide excellent information directly from Nantucket Corp., including programming tips and techniques and general information articles about Clipper and McMax. You also can go directly to the forum from the Reference Center main menu.

Gentry thinks the forum and reference center can serve as a user-designed product manual, a hotline to Nantucket experts and a programmer's toolbox. "We treat CompuServe as an extension of our technical support. It is virtually a publication in itself just because it is an excellent medium for getting information out to our customers," she says.

And with the forum tacking in the direction of more responsive customer service, Nantucket does not intend to change course.

Games

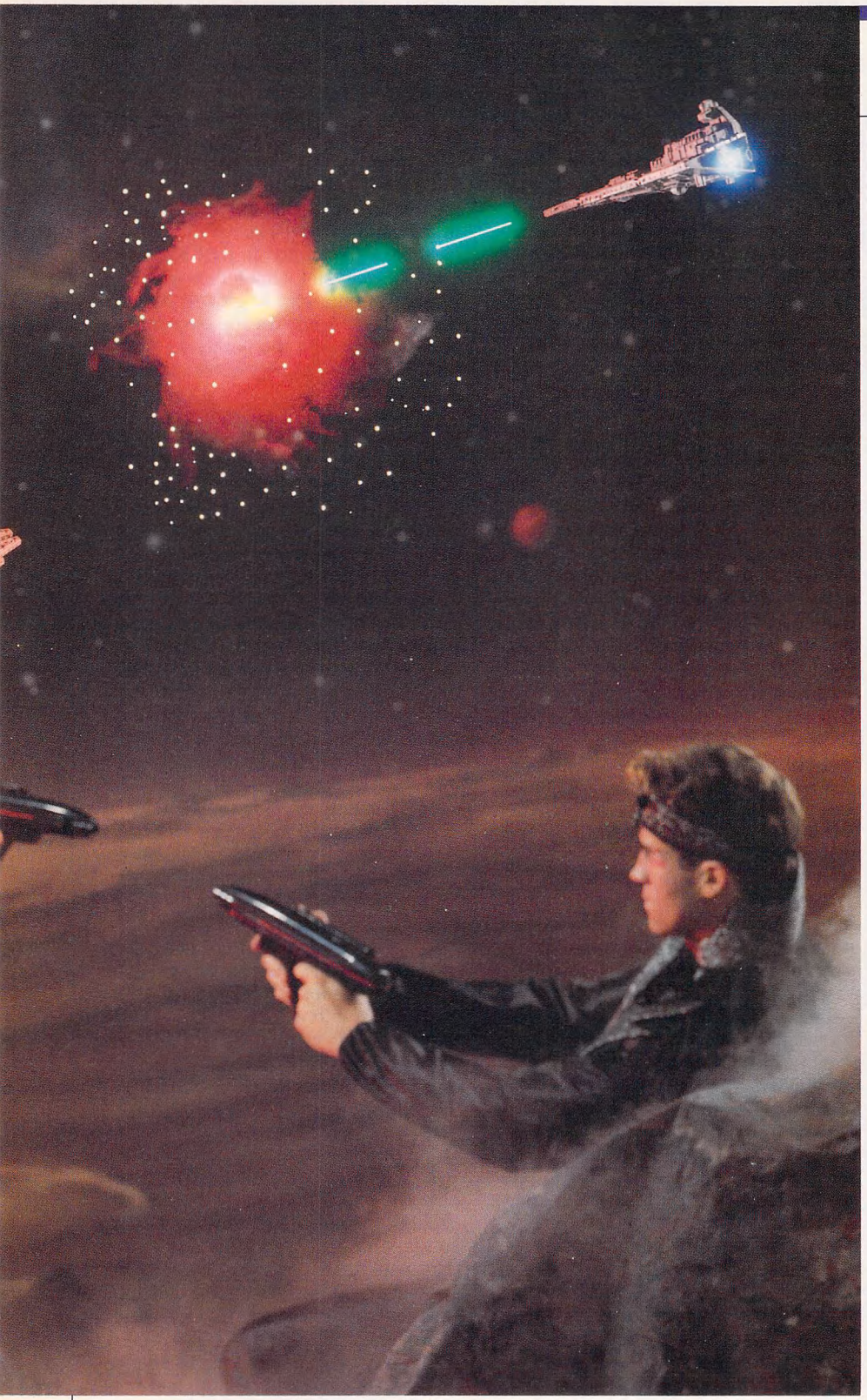
Masters and Players Match Wits Online

by Holly G. Miller

If you call Beth Pickett a witch, you'll not only get away with it, but you'll probably earn a ‹grin› in return. She's died a dozen deaths for the title and has lived to laugh about it. Today she counts among her friends a few thieves, some Good Samaritans, several noble avengers, and a wandering ruffian or two. After a year of slaying dragons, she is still mesmerized by the fun of it all.

Debbie Deutsch's idea of the sporting life is hunting fowl in the mines of Torii and pursuing griffin in the dungeons of Annwn. She's good at it, too. She dreams of the day when she can hear the mournful howl of a hobgoblin after she's dealt the rascal his fatal blow. She claims that thoughts of the office and problems with the plumber who won't return her calls drain away when she spots a covey of critters poised for attack.

"Should I stand or run? What is the best way to fight them? I've got to



Tom Trombley

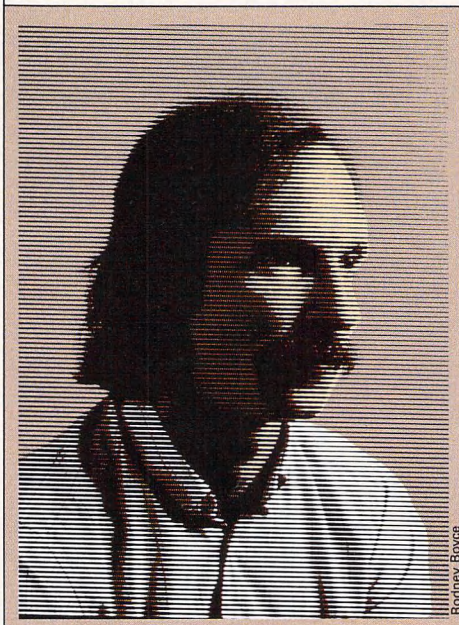
Lensman: *Russ McElroy*

"MegaWars I is a challenge and is entertaining as well, but the real enjoyment comes from the multiplayer aspect of the game. Interacting with other human players is what makes it interesting in a way that a 'man vs. computer' game just can't match."

decide quickly because they'll be on me in one round," she says. "I've been wounded! Should I attempt to escape, try to patch myself up, or continue fighting?"

The office scene fades, and the plumber is put on hold as she deliberates.

Someone once joked that computer games appeal mostly to adult boys and teen-aged men. But don't tell that to Deutsch, "Ulrig" to her pals on the *Island of Kesmai*, or to Pickett, known as "Evangelin" among living *British Legends*. Deutsch and Pickett are typical of the new wave of enthusiasts who tune out when they log on to join in the fun of computer gaming. Part of the attraction is escape, part is entertain-


Rodney Boyce

Bombay: *Allen Bycheck*

"Not like a game you would run on your personal computer, here you get to pit yourself against a real person who could be across the street or the country. A much more formidable foe! It's both entertaining and challenging, and at the same time it's a great way to meet people and make new friends."

ment, and part is exercising wits against players around the country. Making friends in the process is a nice little bonus.

If there was ever such a thing as a "typical" gamer, he's changing. And so is the industry. It's growing at a breathless pace, is becoming increasingly sophisticated, and is gaining acceptance as a legitimate business as well as a valid pastime.

"The average computer gamer fits into two categories: male college grads in their 30s and teen-age boys," says Russell Sipe, publisher of *Computer Gaming World*. At age eight, the publication is the oldest computer game magazine in the country, which says something about the industry. "Gaming is still a hobby heavily dominated by males," adds Sipe, "but more women are becoming involved, especially in the role-playing games as opposed to the simulation or strategy variety. There are a number of products out there now that were either designed by women or designed with women in mind."

To Sipe, gaming is a pastime as well as a profession. He studies its indicators, tracks its ups and downs, and is considered to be one of its veteran spokesmen. He takes issue with the assumption that all gamers indulge their hobby as an escape from reality, and he uses himself as an example to prove otherwise. He's happy with his lifestyle, he says, and isn't looking for ways to dodge it. Still, he's an avid fan.

"At age 37 and being a few pounds overweight, I recognize that my chances of quitting my job and going into the Air Force as a pilot are zero," he admits. "So a game lets me experience a life I can't sample otherwise. The same is true of economics simulations. I'm probably never going to be one of the 100 richest men in America, but I can play with the same problems they do, thanks to a simulation."

If games aren't solely for escape, neither are they just for entertainment. Some are downright mind-boggling in the demands they make on a player's ability to act and react to high pressure situations. A colorful scenario is created; a harrowing conflict is devised; life, death or annihilation are the options; and the resolution is up to the player. Gaming has come a long way, and anyone who hasn't succumbed to its lure since Pacman gobbled quarters and devoured blocks of time is in for a surprise. The good old days—in this case the early 1980s—are gone forever.

"Changes have been coming for some time now," says Sipe. "Back in 1982 or so, we strategy gamers tended to be a very small minority in an industry dominated by hand-eye coordination arcade games. The arcade crash came in 1983 and, from that point until now, strategy and simulation games have been on a steady growth pattern. We're seeing some arcade elements coming back with the Nintendo situation, but I see strategy games continuing to grow."

Making sense of the industry's evolution comes down to the old chicken and egg question. Which came first? Whether gamers outgrew the products and nudged developers to create more sophisticated challenges or whether the developers taught players to stretch their minds by offering increasingly difficult games, is anyone's guess. The result has been the same: As quickly as players have mastered the games, they've wanted to move on to something bigger, better, more demanding, more complicated. This has led many gamers to online products.

"The advantage to online games is that they run on mainframes that will support much larger, more sophisticated programs," says Beth Pickett. "That's why I prefer them. Online gaming allows far more possibilities in terms of creativity and imagination both for programmers and players. To me, store-bought games are now merely interesting; online games are fascinating."

But they, too, can be mastered and outgrown. No one knows this better than Bob Maples, creator of *BlackDragon*, one of the first games to be offered on CompuServe. When Maples designed *BlackDragon* it was for his personal use as dungeon master for a group of friends who gathered every Friday night in Washington, D.C., to play *Dungeons and Dragons*. Record-keeping was becoming time-consuming, so Maples decided to write a program that would help ease the burden. He got caught up in the exercise and soon was generating characters, monsters and maps.

"It dawned on me that this would be fun just to do with a computer," he recalls. "So I added magic items, mazes, traps, pits, and an element so a bat could come along and drop on the player at some random location every once in a while."

He was surprised at the work involved in creating and debugging the game program. Professionally he had designed telephone switching systems with more than 1 million lines of code,

and while online computer games don't approach that size, they have a similar complexity factor, he says. Two years and a half-dozen program versions later, *BlackDragon* was up, running and causing a stir online. Feedback was positive: Men seemed to enjoy confronting monsters, and women liked bartering with vendors and accumulating points to gain strength. Other successful games followed, each with its own gee-whiz elements and cache of surprises. Then the emphasis shifted to multiplayer games.

"Players are becoming more sophisticated," says Maples. "There are products out there now that have lights, sound, color graphics and all sorts of neat stuff. I may do a multiplayer version of *BlackDragon* at some time in the future and put in all the things I've always wanted but never had time for."

This kind of constant updating, expansion and tweaking of existing game programs is what sets online gaming apart from standard retail products. Changes are sometimes suggested by players during online dialogue with developers; or they may be innovations devised by the games' creators; or they might spring from focus group members who meet with CompuServe personnel in key cities around the country.

Mary Morgan, market research analyst for CompuServe, visits twice a year with randomly selected CompuServe subscribers in Boston, Chicago, Columbus, San Francisco and Tampa. She's a trained listener who asks a lot of questions, takes a lot of notes and reports her findings to the decision-makers at company headquarters. The subject of games is a popular one.

"I ask players if they had a wish list, what would be on it?" says Morgan. "What types of games would they like to play if they had the chance, and what kinds of enhancements would they like to see added to those already online? After the meeting, I write a summary of what I've found out, and it is routed to the managers involved in that area."

She believes the online gaming market is changing. Some changes are slow—the number of female players has increased by 4 percent in the seven years she has tracked the numbers—and some are rapid. Gamers now want enhancements that duplicate what they can get in commercial software. They want color, sound and graphics. They want to hear hobgoblins howl, see the sparkle of uncovered loot and watch loathesome monsters slither across the screen. They also want variety. Even if they play only one game, they want other choices available. Even if they have no children, they want products suitable for young people. Even if they don't like trivia, they want the option of declining it.

"It's like going to the supermarket and knowing you're not going to buy everything on the shelf, but you still want to know it's there," says Morgan.

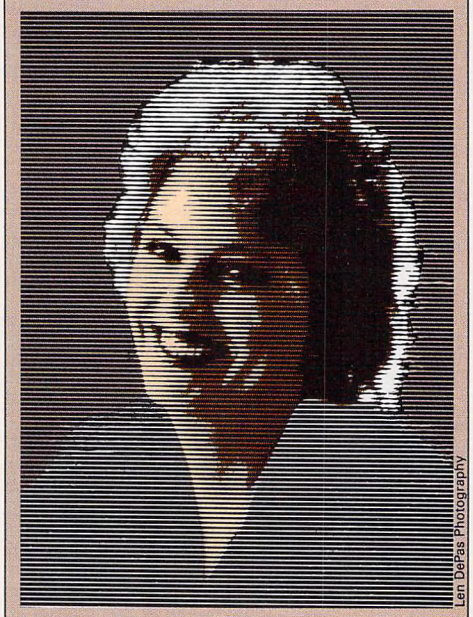
Comments coming from veteran gamers often address their insatiable appetite for more of everything. When "Alyce Blue Gossamer" (a.k.a. Alyce Cresap) and her pals in the *You Guessed It!* studio lobbied for more questions (they had memorized most of the old ones), they got their wish. Jim Howard, one of the game's creators, was given the assignment of concocting new questions, quips and scenarios. Howard (a.k.a. "Eraserhead") enlisted the wits of four free-lance writers around the country to help him freshen the file of 6,000 game questions.

"In the past, we've tended to get a lot of music, sports and movie questions," says Howard. "Those are the big three. So, I've tried to encourage the writers to work in other areas. We now have about 50 general subject categories, and 10 of them have more than 200 questions apiece in them. We'd like to get more questions out of the areas that haven't been hit as hard. That gives us a more balanced game."

Designing questions for *YGI!* fans would be easier if Howard and his staff had a more precise profile of the "typical" player.

"I have never been able to figure out if there *is* a typical *YGI!* player," he admits. "I think we get more women than a lot of other games. Everyone seems to share a good sense of humor, and we seem to draw a number of people who aren't particularly computer-oriented. This is great, because I'm certainly not very technical. In fact, only one of our writers is. Our players log on to talk, crack jokes and have a lot of fun. They're not there to download software."

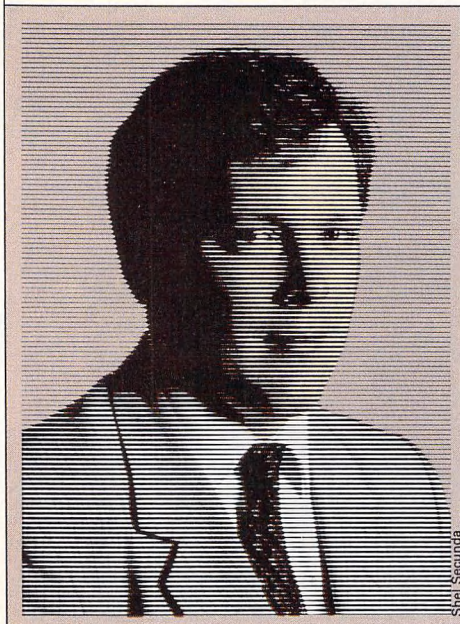
Whether the online environment is populated by spoofy *YGI!* characters or the spooky *Kesmai* kind, hours of work have gone into each brief scenario. *Kesmai* spans four lands and boasts a cast of thousands of computer-run creatures. Its creators, Kelton Flinn and John Taylor, spent years developing the game in the computer lab at the University of Virginia, while simultaneously earning graduate degrees.



Len DePas Photography

Valaria: *Josie Blackman*

"I've made quite a few strong friendships through British Legends*, and it doesn't just stay online. We have get-togethers all over the United States. Next year we'll even get to meet the author and publisher of* BL *at a gathering I'm hosting in San Diego. They're coming from England to meet us."*


Shel Secunda

Stryker: *Chris Gallin*

"I hadn't checked into SeaWAR *or the MPGames Forum for nearly two months. One of the* SeaWAR *players found my company's phone number and called to see if I was all right. He got word back to* SeaWAR *and to the forum (about the birth of our first baby). What resulted was tons of electronic mail, a basket of flowers and even cards via the US Mail."*

Which took priority—studies or game—was never determined, but they left campus with degrees and game in hand. Their product was so complicated that even after they sold CompuServe on its merits, they had to totally rewrite the game to make it fit a commercial environment.

"It's close to being the ultimate game," says Flinn. "It's not the 'be-all or end-all' game, but I think it's about as far as anyone can push current technology. It's about as complicated as a game can be on a commercial system."

And that's all part of the challenge of being a developer for a product like *Kesmai*. You go as far as the hardware allows, then you wait. As the technology gets better, so must your game. Even when a product is done, it's never finished.

"We don't feel we're designing games," corrects Flinn. "We're designing simulations. We create a world and then we let the players roam around in it. Of course, we're always adding to our view of the world, fiddling with things all the time, creating new treasures, making things work better. I suppose at some point you have to call a halt and say, 'Let's see if we want to make a clean break and try something bigger.' But we haven't reached that stage yet."

To keep the players updated on the innovations in both technology and programs, the various online games forums have grown in importance. Gamers Forum Administrator Patricia Fitzgibbons, an expert on what's hot and what's not in the gaming industry, calls attention to both by designating

Bartle's Beat: *Legends* and London

by Holly G. Miller

When *British Legends* players visit London, they have a standing invitation to "do lunch" with *Legends* creator Richard Bartle. His treat, of course. Bartle loves to field suggestions from BLers, as he calls them, although he admits to automatically nixing three frequent proposals.

"I have sheets and sheets of paper with suggestions that I'll put in the game eventually," he says. "But there are three ideas I refuse to consider: a dog that follows you around, an underwater city, and having two bits of uranium that blow you up when you put them together. These aren't bad ideas, but they've been suggested too many times. I've gotten to dislike them. Besides, I hate dogs."

Changes are implemented by Bartle after much input from the game's wizards and witches. He makes adjustments in his development version of the game, then the results are forwarded to CompuServe for thorough testing. If bugs are discovered, the changes go back to Bartle for correction. Often the fine-tuning that transpires between CompuServe and *Legends* headquarters requires several weeks.

Bartle says that the game has changed in two dimensions during its years online. First are programming changes that can affect the way the game is perceived by players. For instance, when he implemented the wizard's Snoop command he spent three hours watching players' reactions. He concluded that the new command would have an important impact on the game.

"The second change is in the attitudes of the players," he explains. "*BL* is dominated by the wizzes (wizards and witches) who determine the 'atmosphere' and who impose their personalities on it. New wizzes arise, and all make their contributions to the game.

"Novices also have an effect; the more there are, the friendlier it seems to be. Certainly it goes in phases: *BL* started off fairly calm, then there was a period of much bloodshed, then fun and silliness, then argument ... the wheel turns! If you don't like the way it is, just wait three months."

BL's roots wind back to Essex Uni-

Developing *Legends* in his own time: *Bartle fields*

monthly *Hot* topics (GO GAMERS). After that, the friendly free-for-all begins.

"Usually a *Hot* topic is a subject or game that has been 'heating up' the message board," Fitzgibbons explains. "At times, I've set up a *Hot* topic and it has become so active that I've created a permanent new section of the message board for it. Cartridge Games is an example of that. Occasionally I choose a *Hot* topic because I feel that a subject or game has potential to attract a lot of interest, but really hasn't taken off yet."

Another new idea initiated by Fitzgibbons has been the Play-by-Mail Forum (GO PBMGAMES), created to serve the growing segment of gamers that has found playing via electronic mail rather than surface mail is faster and more fun. Players engage in diplomacy, make and break alliances, and send their moves to the game companies, all online.

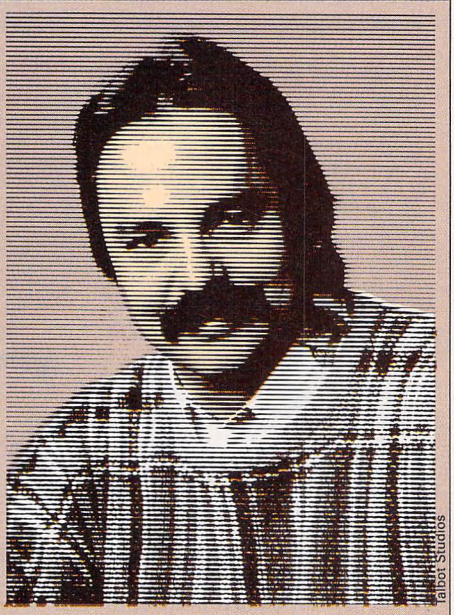
The Game Vendors Forum (GO GAMVEN) is the latest addition to the gamers' support system. Here, game companies, such as Electronic Arts, SubLOGIC, Epxy, Sierra On-Line, Lucasfilm Games, Activision, Mindscape, Spectrum-HoloByte and Accolade, support their own creations. Players can get the scoop on new products, read announcements about when certain games will be available for certain machines and preview game demo programs in the library. Customer-support representatives, project coordinators, designers and other technical staff are present in GAMVEN to answer questions.

Perhaps the most welcome visitors to any of the forums are the veteran players, and game operators who take time to help novices learn their way around.

"I frequent the Multi-Player Game Forum (GO MPGAMES) and answer questions from new players and keep everyone informed of upcoming changes in *Mega3*," says Doug Banker, gameop of the futuristic war game, *MegaWars III* (GO MEGA3). Banker, an expert player, was elevated to his current position more than two years ago and has been instrumental in bringing about many of the changes and improvements in the game since then. He serves as a liaison among the players, Kesmai Corp. (originators of the game) and CompuServe. He fields questions, supplies answers, communicates ideas and tests new versions. He keeps veteran players active by pointing out innovations, and simultaneously draws newcomers to the galaxy by removing the fear factor.

Such interactivity is typical of online gaming, and it has helped to ease the growing pains of the games industry. It also provides the single most important asset of online gaming: friendship. At least that's what the players say.

Holly G. Miller, a free-lance writer and college professor from Anderson, Ind., is a contributing editor of The Saturday Evening Post *and* Indianapolis *magazine. Her CompuServe User ID number is 70007,2345.*



Talbot Studios

Quasimodo: *Doug Banker*

"We finally decided to meet in person. Instead of introductions, I went down the line and attempted to guess who everyone was, based only on my knowledge of playing with them in space. It was easy. I had gotten to know these guys so well playing together day after day, war after war, that I felt like I had known them for decades."

versity where it was developed by Bartle, a former Essex lecturer in artificial intelligence. Originally the game's name was *MUD* (*Multi-User Dungeon*) and was so popular at the university that school officials had to restrict computer access hours to the middle of the night. All this laboratory time helped to hone the game, so when it was introduced stateside, its success was instant.

MUD continues in England, in the company of *MUD2*, a different version of the game. Bartle considers it to be "the leading edge in the design of multiuser adventures." Some of the innovations may find their way to the colonies along with the myriad of ideas submitted by players here and there.

"We have absolutely no difficulty in thinking up what to put in *BL*," concludes Bartle.

suggestions from 'BLers'

Jim Arnold

Artists only

The Games Kids Play

by Cathryn Conroy

The games children play allow them to have fun while learning about themselves, relationships and the world. But expensive board and computer games are not necessary. Non-commercial games that are passed on from generation to generation—hopscotch, hide 'n' seek, kick the can—can benefit a child as much as a game from the toy store. All that is needed is a sunny day, a little imagination and some friends.

Yvonne Andres Syer, a CompuServe member and junior high school computer teacher, has spearheaded an international collaborative project to compile a database of the games kids play. Using electronic bulletin board systems, including CompuServe's Education Forum message board, Syer put out a worldwide call to teachers last August. By the end of October, more than 450 students from 27 schools in the United States, Australia, Germany, France, Canada and Taiwan submitted nearly 4,000 non-commercial games—complete with rules—for the database, which is titled "Let the Games Begin."

For instance, does this game sound familiar? "One person bounces the ball off of the stoop as hard as he or she can. The others try to catch it on a fly. If someone catches it, that person becomes the bouncer. If no one catches it, the bouncer gets a point. Whoever gets 10 points first is the winner." According to a class of 10- to 12-year-olds in Columbus, Ind., this is Stoop Ball.

Through the project, Syer says, the children developed their descriptive writing skills, broadened their cultural experiences, and became aware of the similarities and differences among children around the world. In addition, the students learned how to collect, organize, store and retrieve data using telecommunications.

The project attracted participation from elementary school children, disadvantaged junior high school kids and even students at Cornell University.

Something this large could not have been coordinated without electronic communications, according to Syer. Not only was the project announced electronically, but teachers communicated with Syer for several months by sending electronic-mail messages, and all final entries were submitted electronically.

But more important, Syer believes that computers can make a big difference in how a child learns. Syer's school has a mixed ethnic student population that includes Hispanics, blacks, Samoans, Asians and a small percentage of Caucasians. Many of the students are the children of soldiers stationed at the nearby Camp Pendleton Marine Corps base and are not accustomed to attending one school for more than a few months. A number of students are the children of migrant Mexicans searching for work in the fruit orchards and vegetable fields. Only one-third of the students who attend in September are likely to be there in June. But Syer says that computers and projects such as "Let the Games Begin" draw out the students' potential for creative, quality work by getting them enthusiastically involved in a project of universal interest that can be accomplished in a cooperative learning group.

The database is being distributed to all those who participated, and Syer plans to update it annually and involve more students from different areas of the country and the world.

For more information, contact Yvonne Andres Syer in the Education Forum or via EasyPlex at 71370,103 or at Jefferson Junior High, 823 Acacia St., Oceanside, CA 92054; 619/757-6061.

It's Your Move! Winter Activity Ideas

When young King Tutankhamen played the ancient Egyptian game of Senet, it was already a very old game. Dating as far back as 3200 B.C., the game's rules have been recently "decoded and a modern version of this ancient classic, called *Passing Through the Netherworld,* is available online at The Metropolitan Museum of Art. Delve into the past and another world with this fascinating game for two.

If the future is more to your liking, you can journey across the light-years and explore uncharted worlds with *Traveler 2300,* an action board game from TSR Hobby Center. Those who prefer the present will find dozens of selections, too.

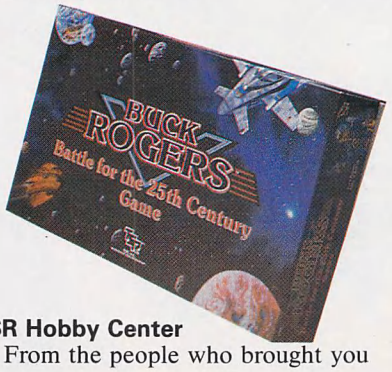
Whatever your playing pleasure, you'll probably find a game online at The Mall. Select an old favorite, such as *Life, Yahtzee* or backgammon. Or pick up such modern classics as *Trivial Pursuit* or *Dungeons and Dragons.* Play the old-fashioned way with board and dice on the diningroom table. Or slip a diskette into your microcomputer and make your moves electronically.

There are few better ways to wile away a winter evening than with a good game. Why not invite your friends over and find out how well you know each other? *I Think You Think I Think* from TSR and *Personal Preference,* a unique card game for family and friends from Games Galore, will put your knowledge of others to the test.

If it's just the two of you, try a game of *Twixt,* a game of strategy. Or stick with a classic such as chess.

All alone? Don't despair! Hundreds of games for you and your microcomputer are available from Computer Express and Software Discounters of America.

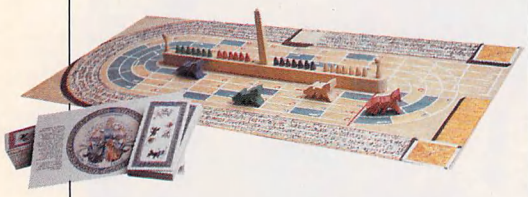
Here's a look at a few of the merchants and some of the games they offer. It's your move!



TSR Hobby Center

From the people who brought you

Dungeons and Dragons, more than 100 online selections, including role-playing games, strategy games, popular interest games and computer games are available. Recent releases that are highly recommended include *Hunt For Red October, Buck Rogers and the 21st Century* and *Dragonlance*. Also sold online are dice and game accessories, miniature gaming figures, and adventure and game magazines. All shoppers are invited to browse the extensive online catalog, and to request a free copy of TSR's full-color catalog of games. GO TSR

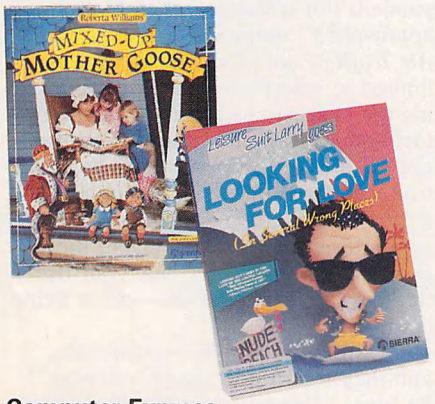


The Metropolitan Museum of Art

Especially recommended is the selection of children's games, including *Pyramid Puzzle, Journey Through Europe* and *Chariot Race Game*. Also featured online are Artdeck playing cards. Play your favorite card games with this attractive deck while learning about modern art from Impressionism to Surrealism. GO MMA

Hobby Center Toys

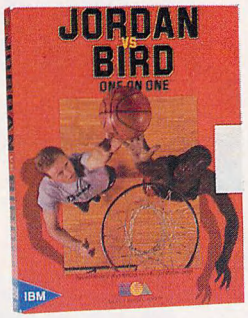
Here is another source of games for the younger set. *Pictionary Junior, Scruples for Kids* and *Adverteasing* board game are among the new selections featured. GO HC



Computer Express

Selections are offered from all of the leading software sources, including Sierra, Electronic Arts and Activision. Computer Express has games for the kid in all of us: action games, fantasy/role-playing games, strategy, arcade, adventure and sports games. Highly recommended titles include *Leisure Suit Larry II* by Sierra, *Modem Wars* by Electronic Arts and *The King's Quest* series. For kids, there is *Mixed Up Mother Goose* and *Jack and the Beanstalk*. For armchair athletes, try *Pete Rose Pennant Fever, Grand Prix Circuit* and *Jack Nicklaus' Greatest Holes of Major Championship Golf*.

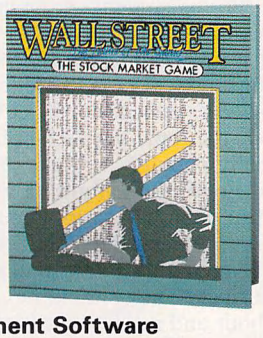
At Computer Express, you can use the demo library to sample select software before you buy. And you can become a preferred customer and receive electronic notification of new titles of interest. GO CE



Software Discounters

Hundreds of selections for IBM, Commodore, Atari, Apple (including the IIgs), Macintosh and Amiga computers are available—from *Ace of Aces* to Infocom's *Zork Trilogy*, from *The Wizard of Oz* to *The Wizard of Wall Street*. For game show fans, there are computerized versions of *Jeopardy, Family Feud* and *Wheel of Fortune*. For adults only, consider *Centerfold Squares* (digitized and X-rated.), *Corruption* or *Strip Poker*.

New titles are added continually. Recent offerings include *Twilight Zone*; *Jordan vs. Bird*; *PT-109 Torpedo Boat Simulator*; and *Life and Death,* a game in which you're the surgeon. GO SDA



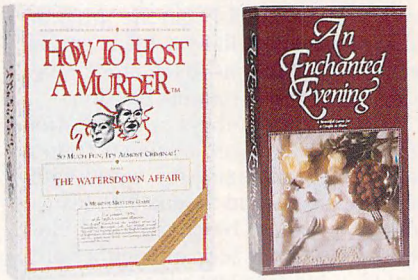
Investment Software

A leading source of investment programs for personal or professional use, Investment Software also offers a selection of simulation games, including *Wall Street—the Stock Market Game, Millionaire* and *Tycoon*. Investors can test their market skills with games like *Speculator—The Future's Market Game* and *OST,* an options strategy tutor that makes learning about options fun and risk-free. GO IS

Sharon Luggage and Gifts

Featured here are games for at home or on the road. For the game room, consider a 36-inch pool table, a dart board or tabletop shuffleboard. There's even a one-armed bandit.

At Sharon Luggage and Gifts, you can indeed take it with you. Two perfect partners for hotel rooms and airport lounges are the computerized bridge game and a computerized, pocket-sized game that lets you play 18 holes of golf, and the wallet-sized *Chess Challenger*. GO SL



Games Galore

Just opening its doors at The Mall, Games Galore is an emporium for true game aficionados. Gamers of all ages will find the new, the hard-to-find and the best of the rest at this Mall store. For the preschool set, there is a selection of Ravensburger games imported from West Germany. Recommended choices include *Snails Pace Race, Baby Bird* and *Race to the Roof.* Selections that are fun and educational for older kids include *Equations, Geo Odyssey,* and the complete line of Logic and Discovery games.

And there are games galore for adults: puzzlers such as *Tangram* and *Configurations*, and games guaranteed to be the life of the party, including the *How to Host a Murder* series. There is even a game for your valentine, *An Enchanted Evening,* in which you and your partner write down one wish you'd like fulfilled. GO GA

Estvanik Thrives on 'Tough Terrain'

by Holly G. Miller

When Steve Estvanik takes a breather from designing white-knuckle scenarios for *Air Traffic Controller*, he unwinds by trekking the Himalayas or scaling the Alps on Nordic skis. "A safe thrill" is what he calls these get-away-from-it-all, daredevil vacations. No laptop computer is tucked in his backpack—"I haven't found an extension cord long enough"—and programming ideas can only be scribbled in the margins of his trip journal.

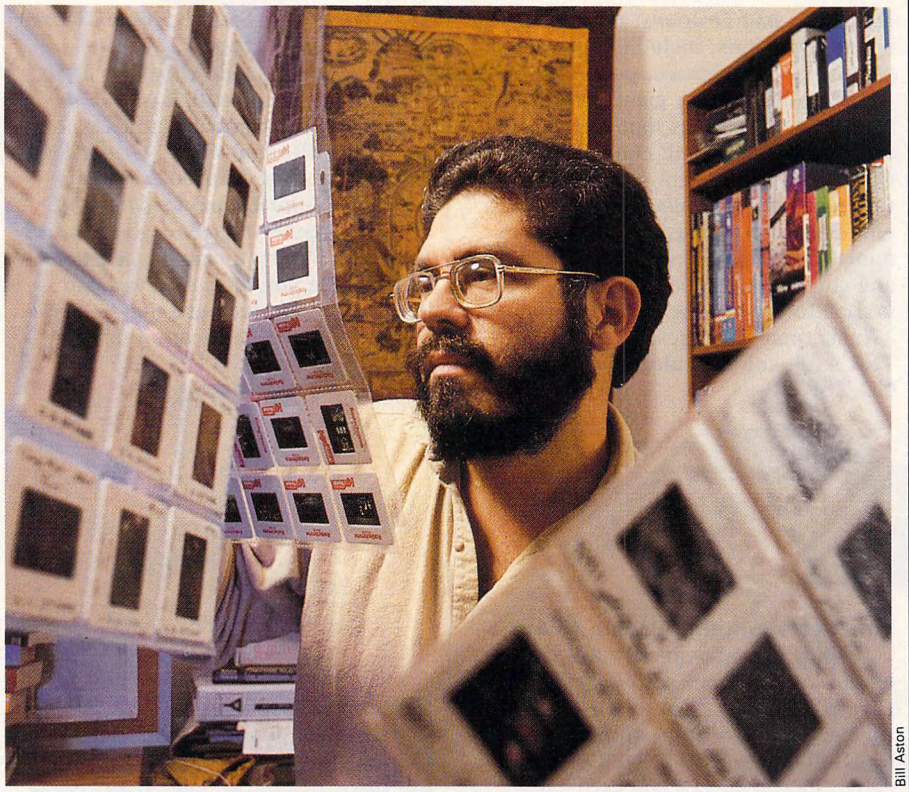
"I'm always thinking about concepts for new games and how they might work," Estvanik says. "It is common. You beat your head against a particular problem back home and look at it so long that you can't solve it. Then you do something else and the answer pops up." His most recent "something else" was serving as tour guide for a mountaineer club that wanted to hike Nepal.

Estvanik estimates that he has a half-dozen game designs in "incubation," each developed to the point that he could begin the programming phase immediately. Ideas spring from his profession—data processing consulting—and from his passion—traveling to out-of-the-way destinations. One of his creations, *Designer Genes*, has players colonizing the world with new organisms and is linked to his college majors of biophysics and biochemistry. Other scenarios either are rooted in his frequent visits to Central Asia or can be traced to his fascination with history.

At any given time, a dozen books are stacked by the terminal in his Seattle office, ranging from science fiction to fantasy to mysteries to non-fiction. He credits books with igniting some of his best ideas. A recurring theme that has surfaced in many of his projects is a familiar one for historians: the need for cooperation among people.

"Like a lot of war gamers, I'm basically a pacifist," he says. "If you study conflict in depth, it's hard not to come away thinking that war is crazy, stupid and is never going to be right. While it's difficult to design a two-person game that doesn't involve combat, a multiplayer game offers other options. A player can attack people or he can work with them. He can make alliances with other gamers."

His own gaming days began when he was a preteen in the early 1960s and continued through his high school career. He and several friends quickly decided that the commercial games of that era weren't detailed enough for their tastes, and so they designed their own. A history buff even then, he read about the Napoleonic and Civil Wars and created scenarios populated by soldiers and dotted with miniature ships. He preferred long, strategy games to the role-playing or quick-response variety. He still does.



Bill Aston

Off-beat trips provide new game ideas: *Estvanik*

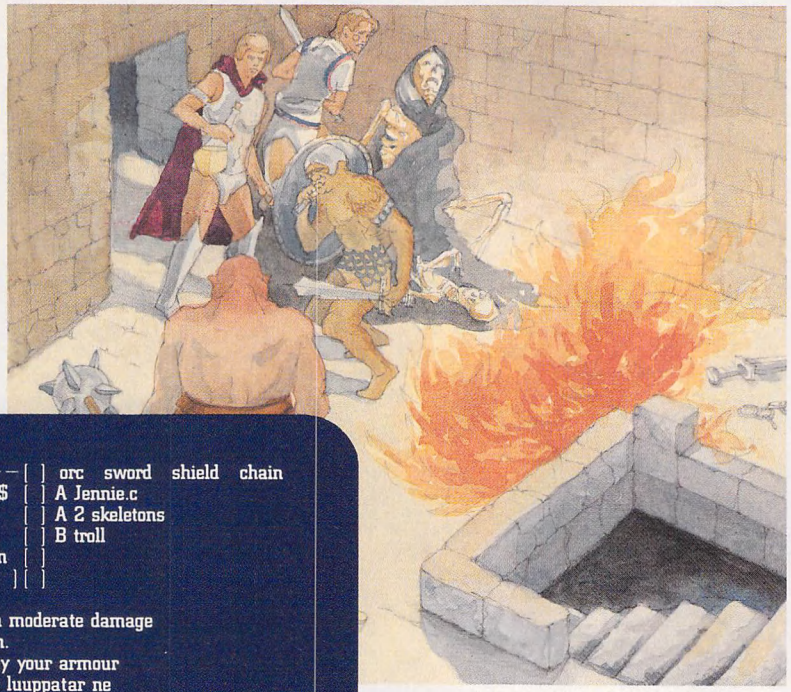
As a serious student of the gaming phenomenon—game design now accounts for about 30 percent of his consulting business—Estvanik believes a game's success depends on three factors.

"First, the topic has to be of interest to many people," he says. World War II is good, as is anything with an exotic, futuristic backdrop. Second, the game has to be easy enough to start playing immediately. Very few players read the rules. They should be able to muck about and not be killed immediately. They'll read the rules later when they want to play really well.

"Third, and this is where most games fail, a game has to keep a player's interest. Even after a player has learned it, there should be something to keep him coming back. This can be done by giving a game so much depth that there is always something to learn, or by enabling the player to be constantly honing his character to do things better."

Estvanik enjoys creating interactive online games because the process is open-ended. Even a product that has been successfully operating for years can be constantly improved and expanded. For instance, when he first approached CompuServe in 1986 with *Air Traffic Controller*, the game was limited to solo players. By incorporating the suggestions of the CompuServe technology staff and, later, by adding the input of active players, he has introduced tough terrains, new levels of difficulty and color. Depending on which level the game is played, the gamer might encounter heavy air traffic, low fuel or mountains—all in living color.

"Games are intellectual pursuits, and they're not necessarily relaxing," he says. "I've had people tell me that *Air Traffic Controller* is one of the most stressful things they do. I see it as a challenge, the same as a good crossword puzzle. You're putting your mind through a rather abstract problem and coming up with a solution. When you solve it, you feel relief, and with relief comes relaxation."



```
[ ][ ][ ][ ]--[ ]  orc  sword  shield  chain
[ ]A        $  [ ]  A Jennie.c
/ >    ****    [ ]  A 2 skeletons
[ ]    ****    [ ]  B troll
[ ]B       dn  [ ]
[ ][ ][ ][ ][ ][ ]

Swing hits with moderate damage
skeleton is slain.
orc is blocked by your armour
troll: kia ardata luuppatar ne

>throw bottle at troll
R mace    Hits    Hits On  Stamina  Exper.  M. Pnts.
L bottle   35       5       10      6523      9
```

Inside the *Kesmai* screen

How to Interpret the Kesmai Screen

by Holly G. Miller

"This sure doesn't look like Kansas." Neither does it resemble Oz, in spite of an abundance of wizards. No ruby slippers can click you back to Mu, and no cowardly lion will see you safely through the catacombs. You're on your own: Welcome to Kesmai.

On your first visit to the ominous online island, you'll want to explore the town of Kesmai before entering one of the dungeon's two main entrances. To successfully avoid bumping into closed doors, getting tangled in a spider web or walking up a down staircase, you'll need to become familiar with the symbols used in the game's maps.

"After you play the game for a while, these symbols become second nature," assures *Kesmai* scenario designer Ben Shih. The game's creators simplified the get-acquainted process by choosing symbols that closely resemble what they represent. The series of quotation marks, for example, suggests grasslands; asterisk signs hint at fire; the short, wavy lines are keyboard facsimiles of water; and the letter *h* is the next best thing to a throne.

A map of where your character is located appears in the upper left corner of your screen and is dotted with symbols. The rest of the screen alerts you to the presence of other players and creatures in the room, anything important that has happened before you arrived, current updates on your stamina, how much damage your character has sustained, your magical strength and what you're holding in your hands.

In the map illustrated here, you're standing in the room facing east (>), by the open door, with walls all around you, broken only by one closed door (—) and one open door (/). In the southeast corner of the room is a down staircase. A fire rages to your east (**), and north of the fire is something on the ground ($). You're not alone. Another character (Jennie.c), two skeletons, a troll and an orc in chain armor are also in the room. The text to the right of the map alerts you that the orc is armed with a sword in his right hand and has a shield in his left.

Below the map is a play-by-play account of the action. You've successfully made contact with the orc and when he retaliated, his swing was blocked by your armor. Whew! In the meantime, another character (Jennie.c) has killed one of the two skeletons (thanks, J.c.) and the troll is chanting a garbled spell.

At the bottom of your screen you're told you have a mace in your right hand (R) and a bottle in your left (L). You're hoping that the bottle contains something dangerous, such as naphtha or nitroglycerin, that will defend you against the pesky, babbling troll.

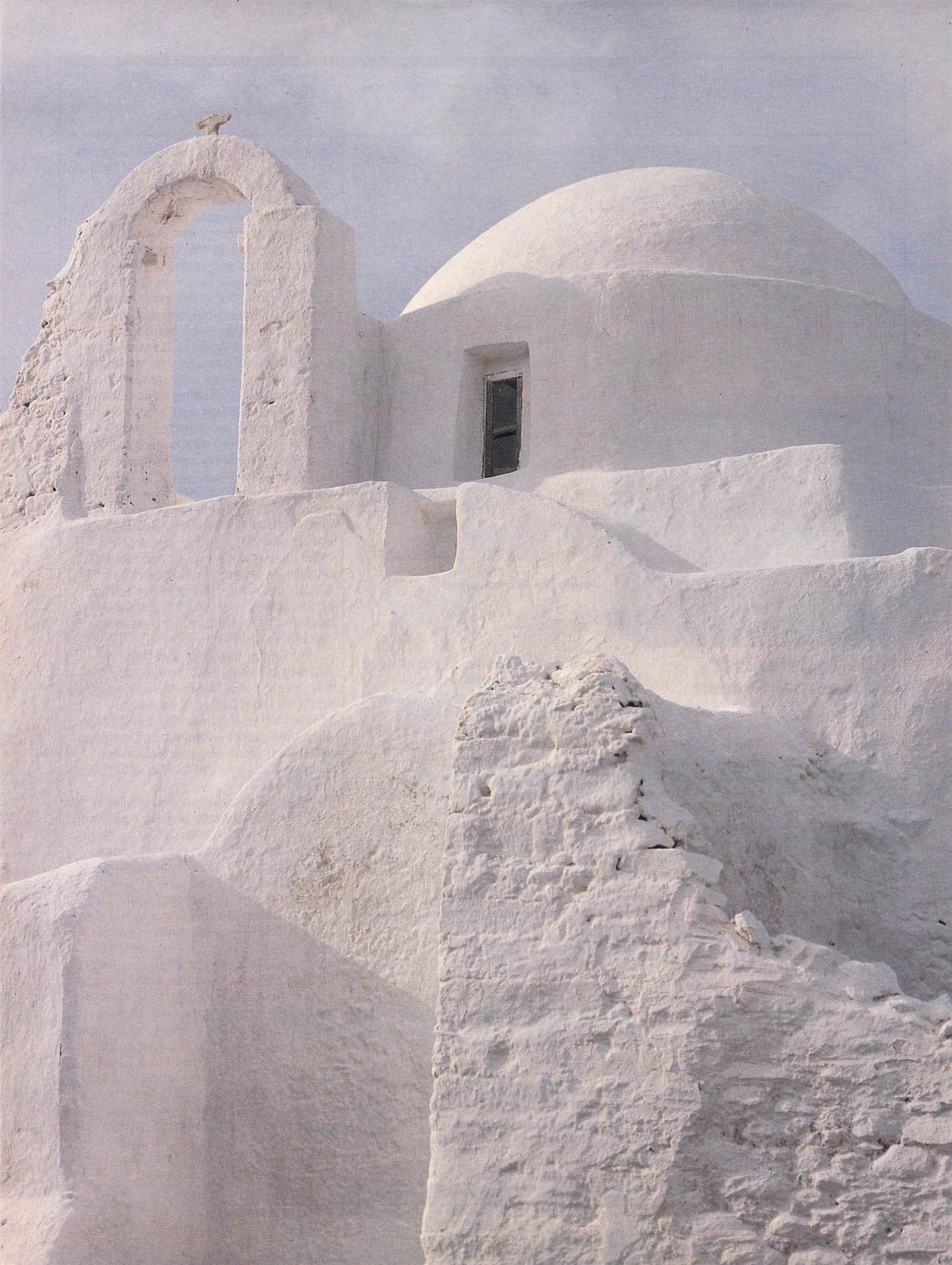
The screen also gives you a running tally of how many hit points you can sustain before dying. "Hits on" indicates the damage your character has already endured. Stamina gives a measure of how much energy your character can exert without a rest. Moving too fast or carrying a heavy burden can reduce stamina. Your experience points (6,523) indicate that you are a Level 5 character (every player starts at Level 3), and you have 9 magic points.

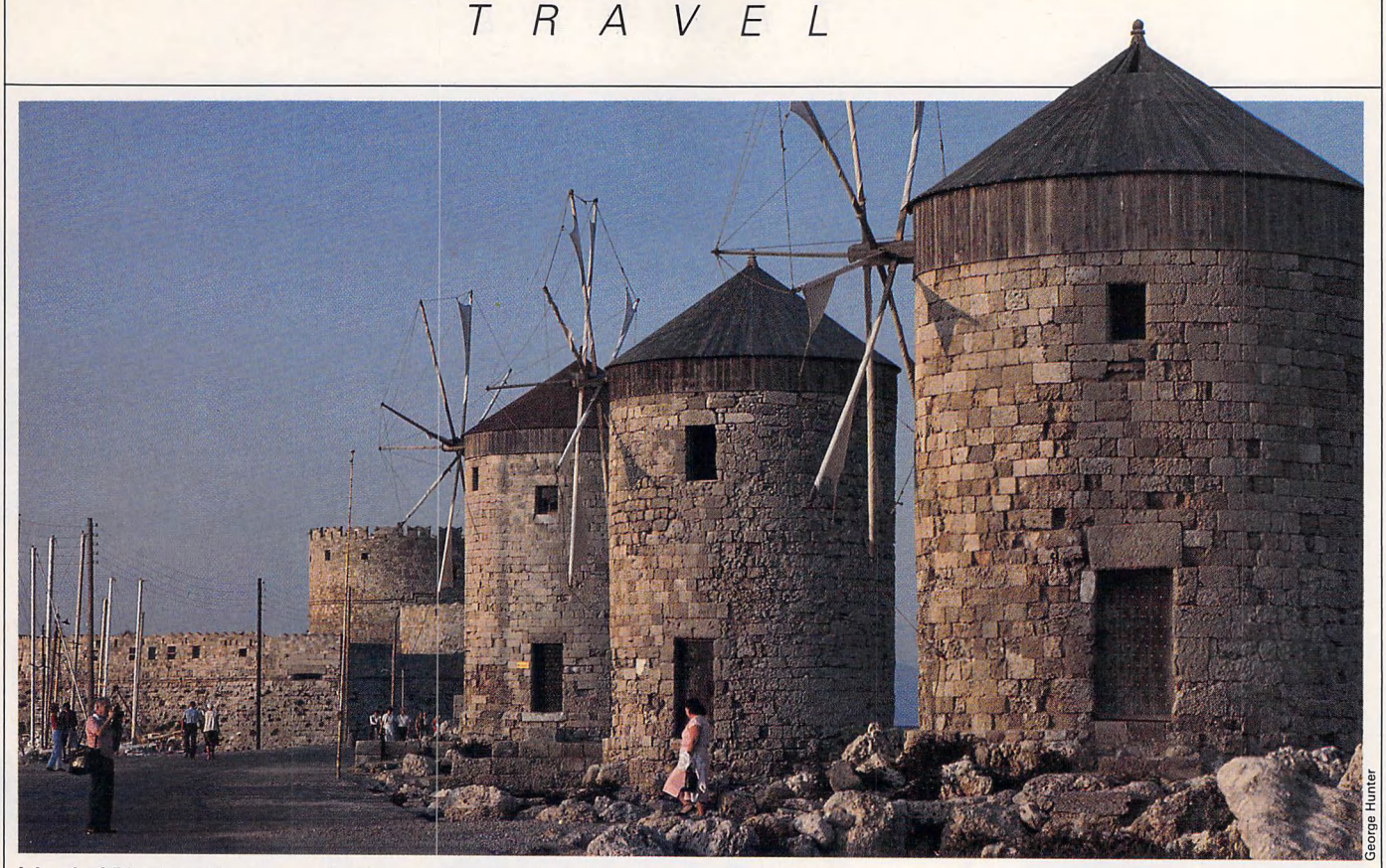
What's next? Your directions are to throw the bottle at the troll. Just follow the right-arrow prompt (>) ... which sounds a lot more dangerous than following the yellow-brick road.

Guide to Game Symbols

Here's a list of symbols used in the game's maps and what they represent.

[ ]	a wall	[_	a ruined wall (you can cross it)
−−	a closed door	/	an open door
|	a closed door	**h**	a throne
up	an up staircase	@	trees, or thick forest
dn	a down staircase	**	a file
~~	water	@@	a spider web
~.	ice	**mm**	an altar
==	a shop counter	**( )**	a pit
::	a bridge or dock	**oo**	mountains
$	items on the ground	**o**	a trash can
··	open air	" "	grasslands





George Hunter

Island of Rhodes: *Evening sun lends warmth to the windmills along Rhodes harbor quay*

Embark on an Odyssey

Greece Bears the Gifts of Ancient Artifacts and Sweet Baklava

by Holly G. Miller

Anyone who has ever dreamed of being in Jacqueline Onassis' shoes or of following in the footsteps of Paul McCartney should take a subway to 89 Pandrossou Street in Athens and share the fantasy with Stavros Melissinos. For a few thousand drachmas, Greece's most famous sandal-maker will send tourists clip-clopping on their Greek odyssey in shoes similar to those he has furnished for the former first lady, the Beatles, Sophia Loren, Rudolph Nureyev and other members of the international set.

And don't be put off by his price. The Greek economy is inflated, with the exchange rate generally about 150 drachmas to one US dollar (GO PARS for up-to-date currency conversions). Although Stavros' prices are fixed—probably because of his glittery clientele—most of his fellow fleamarket stall-keepers are willing to negotiate.

Shopping Athens' cluttered marketplace (called the *Plaka*) at the foot of the Acropolis is almost like participating in a Greek drama. Merchants' faces change from tragedy to comedy to tragedy as the give-and-take of price haggling is played out. Bargain-hunters should beware of Greeks bearing gifts for sale. Mythology lives on as every copper pot is proclaimed a treasure retrieved from a sunken galleon, and every fisherman's cap was supposedly confiscated from a ship-wrecked crew. Tourists are easily spotted by the traditional Greek "worry" beads wound around their necks close to their cameras, the fluffy *Flokati* rugs tucked under their arms, and Stavros' sandals slipping on and off their feet.

Europe's Favorite Watering Hole

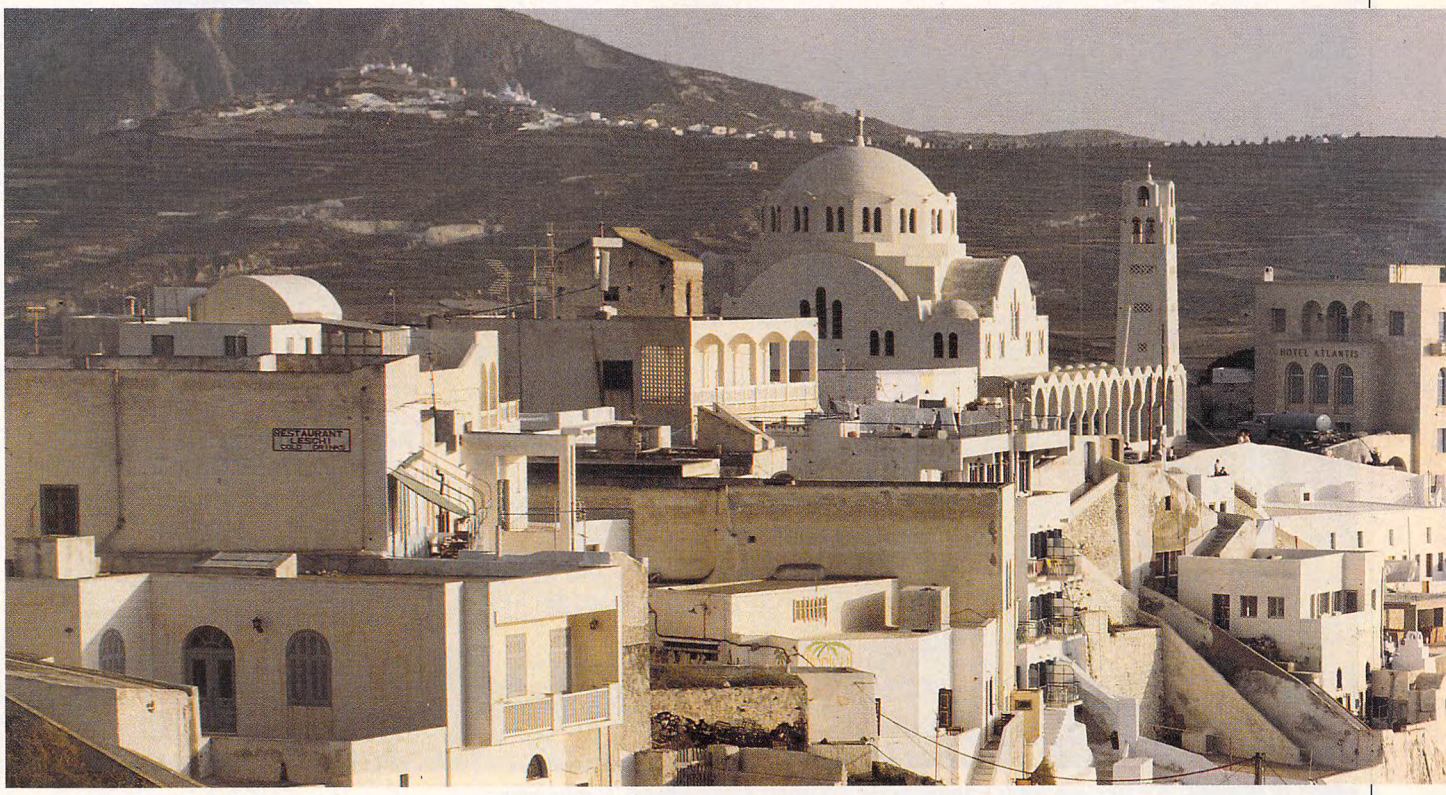
As a European destination, Greece is much more than ancient artifacts, archaeological digs, museums and art galleries. The Parthenon, Temple of Zeus and Theatre of Dionysus may draw first-time visitors to the cradle of democracy, but the dry, sunny beaches of Rhodes, the pastry shops along Sintagma Square in Athens and the seafood restaurants in the port of Piraeus keep them coming back. Interestingly, a recent survey indicated that Europeans choose Greece as their top vacation spot over any other country.

To adequately "do" Greece, you should plan to stay at least a week, spending three days in teeming Athens and then escaping on a four-day cruise to the islands. Even so, you'll sample only a fragment of this colorful country. Although smaller than Alabama, Greece has 3,000 years of history to track, more than 2,000 sun-bleached islands to glide past (most are uninhabited) and hundreds of outdoor tavernas where you can toast all you've missed with a thimbleful of *ouzo* (a spirited anise-flavored aperitif).

When in Athens ...

If you're combining a visit to Greece with stops in other European countries, plan for a wardrobe adjustment. You'll make three quick observations when you land at Athens Airport Eliniko: it's hot; it's dry and it's casual. The "season" stretches from April through

Island of Mykonos: *Whitewashed chapel greets entrants to harbor (left)*



Island of Santorini: *Architectural centuries collide in beautiful village of Thira*

October, with temperatures reaching the 90s in July and August (GO WEATHER). Men rarely wear ties, and women are comfortable in sundresses, longish shorts and cotton slacks. Because the city is sprawling and the 60,000 taxis and the underground train system are often jammed to capacity or on strike, you should expect to walk a lot. Comfortable flat shoes make sense on the busy, narrow, uphill pavement.

A good way to treat yourself to a visual and historic overview of Athens early in your stay is to trek to the Acropolis after dinner and attend the daily 45-minute Sound and Light Show. For about $3 per person, members of the audience sit under the stars in folding chairs high above the city with their eyes focused on the monuments. Recorded narration—the English version is at 9 p.m.—gives a you-are-there kind of account of the city's history. Sound effects, stirring music, a variety of voices and colored spotlights recreate the battles, fires and invasions that the city has endured. It's a typical tourist diversion, but it serves as a crash course in civics, with the "classroom" a lot more enjoyable than the traditional variety.

Another must-do stop is the New Regis Taverna in downtown Athens. It's called "new" because the old one was destroyed by fire, although no one remembers when. The rebuilt version has been in place for more than 125 years. (Athens is like that. Anything less than 200 years old is new; everything else is old, really old, or incredibly old.) The Regis is geared toward tourists but it's not contrived. Huge murals decorate the walls, courtesy of a local artist in exchange for many dinners. The menu is fixed and leisurely, beginning with *orektika* (appetizers) of stuffed vine leaves, oregano-flavored meatballs and tiny cheese pies. A traditional Greek salad and lamb shish kebabs follow.

What sets the New Regis apart from other tavernas is the entertainment. The same show is repeated every night, 365 nights a year, yet the troupe of folk singers and dancers maintains a spontaneous mood in the polished performance. The tempo picks up to a fever pitch, with the athletic male dancers beginning with slow Zorba-like steps and progressing to daring leaps and twirls. The festivities continue until 3:30 in the morning. This serves as a raucous send-off to the laid-back cruise to come.

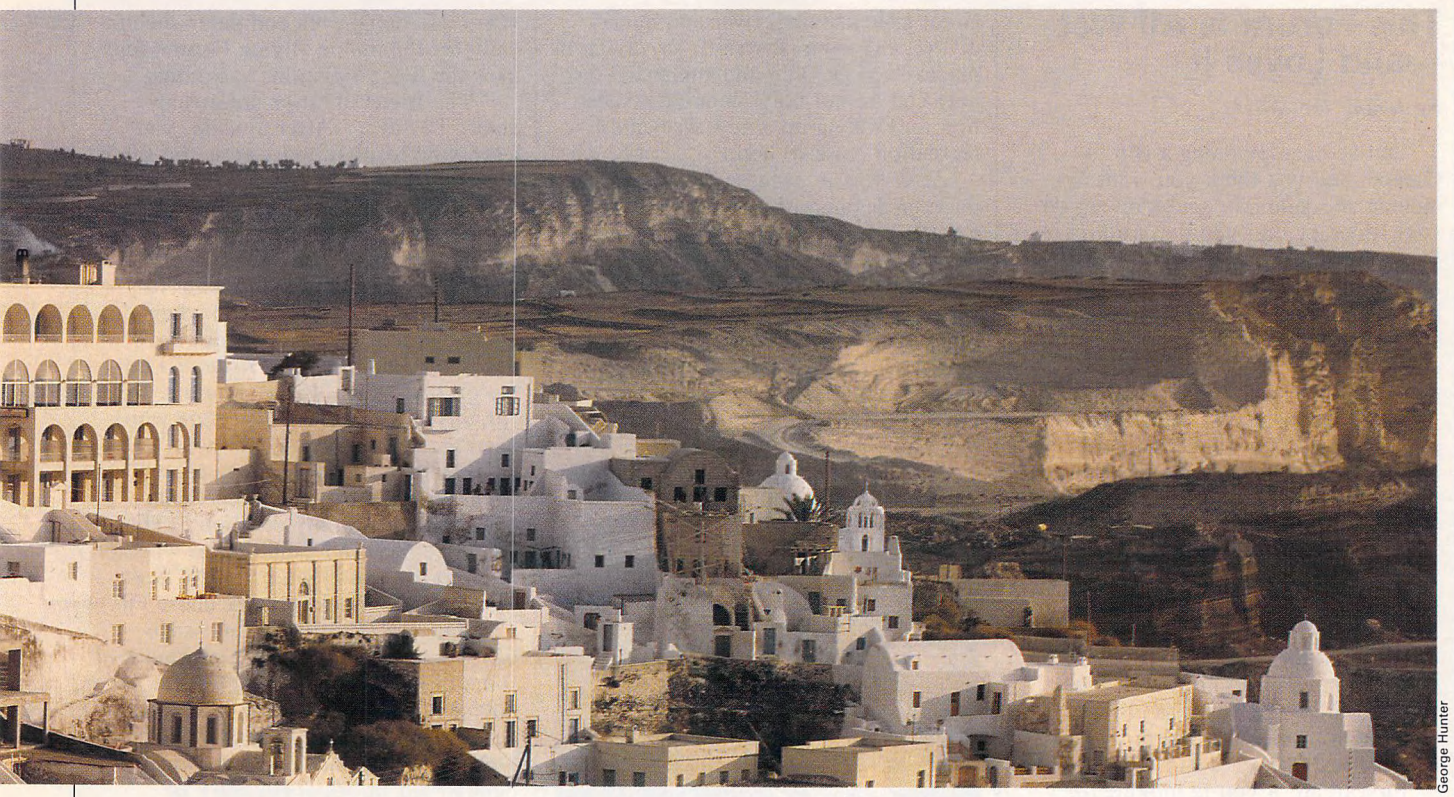
Cruising the Aegean

Certainly one of the disadvantages of a Greek cruise—and there aren't many—is that you meet so few Greeks. Except for the ship's staff and the locals you see briefly in the ports of call, most persons will be foreign like yourself. Greek cuisine prevails, but now it is served by multilingual waiters. This comes as a pleasant surprise to those whose Greek vocabulary is limited to baklava and Michael Dukakis.

Cruises to the islands are offered almost smorgasbord style. You can pick from a variety of programs depending on how long you want to be at sea and which of the ports you want to visit. The islands offer a tremendous assortment of attractions. Some are jet-set destinations, some are quaint. Some have a single noteworthy feature, others have an abundance. Perhaps the best mix is one that isn't heavy on one attraction. Shopping is fun, but after a while the trinkets all look alike. Ancient ruins are awesome ... unless you've spent too many days at too many digs.

Mykonos

Light on historical significance, heavy on the good life, the island of Mykonos is like a dollop of cream in a



George Hunter

sea of blue. With 365 churches and a law that all buildings must be whitewashed twice a year, it's one of the most picturesque ports in the southern Aegean. Boutiques and cafes are everywhere, making the tiny isle a jet-set pet.

Santorini

Getting to this volcanic island's largest village is either half the battle or half the fun, depending on how much you enjoy zigzagging a vertical cliff on the back of a mule. An ever-ready photographer records the adventure on film, and a print is available for purchase when (and if) you safely descend. The view from the top has always been worth the climb, and was particularly appreciated by the Egyptians and Romans who needed a vantage point to maintain their rule in the Aegean. Santorini has suffered its ups and downs: it was formed by a monstrous volcanic blast, but its center sunk during a later eruption.

Rhodes

Unlike so many islands, Rhodes deserves a full day or a multiday visit. Because of its perfect climate—it never snows in the winter, never rains in the summer, and the sea breeze is continuous—the island has a thriving tourist business. Ever since actor Anthony Quinn visited while on location for "The Guns of Navarone," bought a bay and stayed, it's been a favorite of wealthy tourists. Six daily flights now arrive from Athens and have resulted in a booming trade for the island's 200 hotels.

Even if time is limited, plan to spend at least four hours in Lindos, an ancient city on Rhodes' east side. The climb to the Acropolis (375 feet high) is not for vertigo sufferers, but the photographs that result will make the trek worthwhile. You'll walk through ancient and medieval terraces, sanctuaries, staircases and theaters. Travelers who believe "if you've seen one set of ruins you've seen 'em all" change their minds at Lindos.

Traveler's Advisory

If Greece sounds like heaven, be aware that there's been trouble in paradise this year. In July, terrorists opened gunfire and tossed hand grenades at hundreds of passengers aboard a Greek cruise ship docked at Piraeus, the seaport adjacent to Athens. While this is not a common occurrence and could happen anywhere, it brings to mind two pieces of advice.

First, the Greek people, friendly and hospitable as they are to tourists, are tuned into world politics. They enjoy sitting for hours over cups of bitter black coffee discussing international events. Because Americans may not be knowledgeable of the hot issues in this part of the world and may not be aware of the Greek government's point of view, they should avoid getting involved in such debates.

Second, several weeks prior to departure for Greece, travelers might want to begin monitoring the news to learn of any trouble spots that are included on their itinerary (GO APV for news from Associated Press and GO DOS for the most recent travel advisories from the Dept. of State). With the assurance that the coast, literally, is clear, it's *bon voyage* and pass the *ouzo*!

Holly G. Miller, a free-lance writer and college professor from Anderson, Ind., is a contributing editor of The Saturday Evening Post *and* Indianapolis *magazine. Her CompuServe User ID number is 70007,2345.*

This Forum Is All Wet —and Loves It

by Jenine Howard

You've been planning a trip to Greece, and you think you want to include snorkeling or scuba diving on your itinerary, but you don't quite know how to go about it. Or you're taking a Caribbean cruise, and you've heard snorkeling is a great off-boat activity, but you'd like to know a little more about it before you take the plunge. What to do?

Well, because most travel agents don't have a ready supply of undersea brochures, you'll probably have to do what experienced divers do—rely on word of mouth. You say you don't know any divers to ask for words of wisdom? Not to worry. There are plenty right at your keyboard. The Diving Forum (GO DIVING) has the divers, and the divers have the answers. You can find information on where to dive and when to go, what equipment to buy and where to seek medical help, if necessary.

First of all, if you're looking for advice on a dive site, there are several places in the forum to find it. In the forum libraries, you'll find a wealth of information that has been uploaded by divers from their own diving experiences. Like anyone telling stories of recent vacations, the authors are enthusiastic about sharing their experiences (both good and bad) and making recommendations to other divers.

Here, you'll find a file described as "a review of my experiences aboard the dive boat 'Truth' on a two-day trip out of Santa Barbara, Calif., to San Miguel Island in the Channel Islands." Another is "a short note on diving a couple of Colorado lakes." There is information on diving off the east coast of Florida, a description of the deep ledge off Lahi-lahi Point in Oahu, Hawaii, and a report of open-water training dives in the British Virgin Islands.

If you are intrigued by the title "The Story of Snakebait," you'll find a humorous account of one diver's experiences with sea snakes in the waters around Okinawa. And what do you suppose this file contains: "Bimini, Bahamas—The Continental Shelf, the Road to Atlantic, and a Very Friendly Sea Critter."

Some of the US locations may surprise those who associate diving with the clear waters of the Caribbean or the Red Sea. Many of the files focus on Great Lakes diving, river and quarry diving, and even (Brrrrrr!!) ice diving in places such as Ohio and Indiana. You may end up not only planning a vacation, but taking up a new weekend recreation close to home.

After you've accessed all of the files on your destinations of interest, you'll want to check out the forum message board. The board is divided into the same 16 categories as the libraries, with "US Dive Sites" and "Non-US Sites" listed as Options 3 and 4. You may post a message on your place of interest to all forum members. Chances are you'll get back specific advice from numerous members.

A recent message thread began with

Divers' discourse: *Scuba Forum*

a query on Australia's barrier reef from a subscriber in Tokyo. The diver wanted to know of a world-class dive resort, a good hotel, and a reliable dive shop that conducted dive outings and courses with "particularly good service." Answers came back quickly with names of dive shops and hotels, evaluations of the service and other advice.

Messages on sites all over this country and the world show up on the board. During last summer's Hurricane Gilbert, the board was particularly busy with divers wanting the latest information on their favorite Caribbean sites, and others supplying updated information as it became available.

The travel files and the message board are popular with forum members. Larry Anderson has been diving for six years. He bought his computer specifically for the online Diving Forum, and uses the files to plan his vacations.

"The travel libraries are invaluable," he says. "After a while, you learn who to trust and who is the same type of diver you are. I'm a hard-core diver and an underwater photographer. When I can take only one, two or three weeks a year to travel and do what I love best, I certainly don't want to waste my time or money. So when I'm interested in a new dive location, I check the libraries first. If there's no file on that site, I'll post a notice. Invariably, within hours, someone who's been there will leave a comment, and an extended thread of messages will begin. This exchange will certainly have an effect on my decision." The forum helped Anderson decide whether to go to the Coral Sea or to Fiji next year for a two-week trip. (He chose Fiji.)

While the libraries and message board contain much useful information, some of it will be daunting for the novice diver. That's when it's best to access Library 12, "Learn to Dive!" There you will find "Do You Speak Scuba—An Informal Glossary of Divers' Jargon." This file defines terms for you such as "scuba" (an acronym for self-contained underwater breathing apparatus), "bubble watcher" (a non-diver along for the ride), "bottom time" (the duration of a dive), "neutral buoyance" (the state of weightlessness in the water, neither sinking nor rising) and "lift bag" (a device used in salvage operations for lifting heavy objects to the surface).

Access "Great Scuba Myths—and Realities," and you'll find out that scuba diving is inexpensive compared with other popular recreations, is not difficult to learn, is safe if proper precautions are taken, and can be done almost anywhere. Not only that, but divers carry air—a mixture of oxygen, nitrogen and other gases—in their tanks, not pure oxygen, as most people think.

"The Typical Scuba Diver" file attempts to profile this creature of the deep, but Forum Administrator Rick Drew says there really isn't any such person. Drew, who lives in the Chicago area, became interested in diving at age 12, and now spends his time wreck diving in Lake Michigan and quarry diving in the surrounding states. He also teaches diving, including underwater video, wreck diving and entry-level scuba courses.

"In my last class of entry-level students," he says, "there was a 45-

year-old woman, two teen-age boys, a 50-year-old man, a 23-year-old woman and a 15-year-old girl. My oldest student to date was 65.'' Drew says another myth of diving is that it is for men only. ''About 30 percent of the divers today are women,'' he says, ''and this has had a profound effect on diving. A few years ago, one had a choice of black or blue for equipment colors, in limited styles. There are now dozens of colors and styles available.''

If by now you're penciling diving into your next vacation, but you haven't taken that first lesson, there is still more help for you on the forum. Access ''Scuba Education'' to find where to take lessons year-round, and then ''Scuba Equipment'' for advice on how much and in what to invest. You can browse through other files on underwater photography and underwater videos, and learn what research is being done on underwater accidents, and where to find expert medical help.

If you just want to observe some of the wondrous life that is to be found underwater in a nearby lake or in the crystal clear waters of the Aegean, it's not too early to start the planning now. GO DIVING!

Jenine Howard is a former senior editor of Satellite Orbit *magazine and former travel and copy editor for* The Saturday Evening Post. *Her CompuServe User ID number is 76004,1761.*

Take Off Easily with OAG's Enhancements

by Denise Erwin Anderson

Love is in the air. Why not spoil your Valentine with a surprise getaway weekend in the sun or a romantic second honeymoon on a remote tropical island?

If catching the next flight sounds like paradise, first type GO OAG and cruise through The Official Airline Guide's newly enhanced online travel service with expanded schedule/fare display. Select one of the following:

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**********
 1 OAG Electronic Edition
 2 Frequent Flyer/Frequent Lodger
   Award Program Information
 3 Travel News
 4 Tours, Cruises and Discount
   Packages
 5 Country and Traveler's Information
**********
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The OAG Electronic Edition enables you to control your travel plans with online airline reservations and ticketing. You can select the most convenient schedule, find the lowest fare, book your flight and arrange for ticketing of any licensed airline. OAG has reduced its surcharge during standard/evening time from $21 per hour to $10 per hour, and from $32 per hour to $28 per hour during prime/daytime hours.

The travel service is easy to use because it prompts you for departure city, destination and preferred date and time. Readable 80-column displays, clear headings and complete instructions are available at every prompt. Fare displays are shown from lowest to highest for convenient decision making. OAG also provides comprehensive hotel lists, including name, address, telephone number, range of room rates and quality rating, for your destination.

OAG's new ''Frequent Flyer/Frequent Lodger Program Information,'' Option 2, provides telephone numbers and addresses for 20 airlines, including Air Canada, American Airlines, Eastern Airlines, Pan Am and USAir. Minimum award levels and accrual requirements also are listed. Frequent Lodger information is available for nine hotels, including Hilton Hotels, Holiday Inns and Hyatt Hotels.

The ''Travel News'' option features articles, including excerpts from the current issue of ''The Frequent Flyer.'' This menu appears:

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**********
 1 CITY REPORTS
 2 EXECUTIVE TRAVEL
 3 IN BRIEF
 4 INTERNATIONAL ITINERARY
 5 CHECK IN
 6 UP FRONT
**********
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If, for example, you are considering a fun-in-the-sun getaway, select Option 1 and read the ''City Reports'' for Miami, Fla., or Honolulu, Hawaii. Learn which airlines are adding these ports to their non-stop service. Also read about new Rent-A-Car services and hotel accommodations at the destination you select. Reports for at least 15 cities are available from this menu.

An opportunity to turn a business trip into pleasure may be offered in the ''Executive Travel'' option. A recent story described TWA's Frequent Flight Bonus Golf Classic in 17 cities across the country. Contacts for more information are listed online. The ''In Brief'' option describes special airline offers and updates on worldwide services, ranging from rental cars to railroad cars. The ''International Itinerary'' option provides additional world-travel information, including room rates and hotel club memberships.

For an update on other hotel accommodations, select the ''Check In'' option. For example, after checking out this area, you can order a free copy of the Ramada's new 300-page guide to meeting facilities at more than 600 hotels worldwide. The ''Up Front'' option features a travel outlook editorial for a specific destination.

If you think a seven-day cruise is your ticket to romance, select Option 4, ''Tours, Cruises and Discount Travel Packages,'' from the OAG main menu. Cruises are available for the Panama Canal, South Pacific, Hawaii, Greek Isles, Asia/The Orient, Asia/India, Holy Lands, Atlantic Ocean, Europe, Scandinavia and the Mediterranean. The Panama Canal cruise, An American Dream, departs Feb. 27 for 15 nights in San Juan, St. Croix, Cartagena, Transit Canal, Balboa, Caldera, Acapulco, Zihuatanejo, Puerto Vallarta and San Diego. It costs $2,718.

Discount Travel Packages are available for Florida (the Orlando Super Saver) and Hawaii. The Waikiki Dynasty, for example, includes round-trip air fare departing from Chicago, seven nights accommodations, a lei greeting and transfers on Oahu for $599 per person. Space is limited.

The Official Airline Guide acts only as a sales agent for companies providing transportation, ticketing, accommodations and other services offered in these packages. OAG cannot be held liable for these packages.

The last option from the OAG main menu, ''Country and Traveler's Information,'' includes information on countries around the world. It features climate, consulate offices, currency/tobacco/liquor, documentary requirements, electrical current/communications/language, public holidays/calendar of events, taxes/tipping, time, tourist board locations and US Foreign Services offices. Check this area before packing for your cruise or island getaway, to ensure you have the correct proofs of citizenship and to prepare for any emergencies.

And don't forget your sunglasses. OAG promises a warm, romantic holiday.

Denise Erwin Anderson is the assistant editor for Online Today.

Plot Planets, Play Poker with New Forum Files

The libraries in CompuServe's forums are filled with programs and textfiles. The following are a few of the files uploaded to the libraries in recent months. For a more up-to-date list, check the weekly "Uploads" columns in *Online Today Daily Edition* by typing GO OLT-3700 at any prompt.

AAMSI MEDICAL FORUM
(GO MEDSIG)

Hypertext System—A complete hypertext system for MS-DOS machines. Includes complete Prolog interpreter. File COGTEX.ARC in Library 6.

AMIGA ARTS FORUM
(GO AMIGAARTS)

Gantt Charts—AmiGantt, a public-domain program for business people who must keep up with projects involving a number of people. File AMIGNT.ARC in Library 10.

ASHTON-TATE FORUM
(GO ASHFORUM)

Full Impact Aide—A macro to run with Full Impact for the Macintosh, enabling you to enter numerous "alarms" that are triggered when you run the Full Alarm macro. File ALARMS.SIT in Library 16.

ASTRONOMY FORUM
(GO ASTROFORUM)

Planet Plotter—New version of Planets for IBM PCs and compatibles that works with CGA, EGA, VGA or Hercules monitors. Animation is used to show the motion of the planets. File PLANET.ARC in Library 7.

ATARI 8-BIT FORUM
(GO ATARI8)

Adventure Game—The *Original WMAUG Adventure* game for use with Keith Ledbetter's *BBS Express*. Files WMAUGA.ALF and WMAUGA.DOC (documentation) in Library 9.

BORLAND PROGRAMMING FORUM B (GO BPROGB)

***D&D* Characters**—Prolog character generator for *Dungeons and Dragons*. Builds random characters based on the information in TSR rule books. File MAKECH.PRO in Library 2.

BROADCAST PROFESSIONALS FORUM
(GO BPFORUM)

Wind Chill—A program for IBM PCs and compatibles that calculates wind chill factor. File CHILL.ARC in Library 14.

COLOR COMPUTER FORUM
(GO COCO)

Bright Stars—Star Finder for the CoCo shows the position of the 76 brightest stars, 88 constellations and 109 Messier objects in high-resolution graphics. 64K and ECB required. Files STARFD.BAS and STARFD.DOC in Library 8.

COMMODORE MUSIC, GRAPHICS AND GAMES FORUM
(GO CBMART)

Deal 'Em—*Poker Machine* adds a twist to the popular card game. Keeps track of high scores. For the Commodore 128. File POKER.IMG in Library 8.

COMPUTER CLUB
(GO CLUB)

Program for Adam—A genealogy database program for the Adam. File GENE10.LBR in Library 10.

CROSSTALK FORUM
(GO XTALK)

Print Spooler—PSPOOL, a background session print spooler for Crosstalk Mk.4. File PSPOOL.ARC in Library 5.

DISABILITIES FORUM
(GO DISABILITIES)

Special Keyboard—Information about a miniature, IBM-style computer keyboard designed for mouthstick users and one-handed typists. Works with IBM PCs and compatibles. File KEYBD.TXT in Library 6.

EDUCATION FORUM
(GO EDFORUM)

Best Books—A list of the books nominated most frequently by a symposium of teachers and principals that children should read at all grade levels. File BEST.BKS in Library 7.

GAMERS' FORUM
(GO GAMERS)

Tool Kit for Mac—Macintosh version of the Adventure Game Toolkit. File AGTMAC.SIT and AGTDOC.SIT (documentation) in Library 1.

IBM NEW USERS FORUM
(GO IBMNEW)

Kid's Play—CAITY, a program for children two-years-old and up, causes every key to play a musical note while the computer functions. File CAITY.ARC in Library 4.

IBM HARDWARE FORUM
(GO IBMHW)

Format Check—HDSNIFF, a program to "sniff out" the parameters used for the last low-level format on a hard disk. File HDSNIF.ARC in Library 1.

IBM COMMUNICATIONS FORUM
(GO IBMCOM)

BBS Discussion—A thread from the IBM Communications Forum in which experienced BBS sysops discuss the operations of BBSes. File BBSCOM.ARC in Library 4.

INTERNATIONAL ENTREPRENEURS FORUM
(GO USEN)

Direct-Mail Help—Tips to help direct mailers increase results. File RESPON.TXT in Library 4.

MAUG APPLE II/III FORUM
(GO APPLETWO)

File Display—A small NDA that displays the contents of a TXT or SRC file. File READER.BQY in Library 4.

MAUG MACFUN FORUM
(GO MACFUN)

Game for Mac—*Influence*, a game of action, strategy and random events for the Macintosh. File INFL.BIN and INFLDO.BIN (rules) in Library 3.

MICROPRO FORUM
(GO MICROPRO)

WordStar Support—A group of macro-support files for WordStar, all written by Andy Barbolla. Macros to automatically box and center text in single or double lines, among other features. Fast installation. File WS5BOX.ARC in Library 13.

MODEL 100 FORUM
(GO M100SIG)

Program for 200—XBASIC.200 allows cross-bank access in the Tandy 200, which has three independent banks of 24K each. With this program, a BASIC program in one bank can be read and data can be written to files in the other two banks, a capability not previously available. File XBASIC.200 in Library 10.

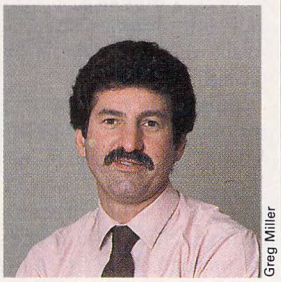
TAPCIS FORUM
(GO TAPCIS)

TAPCIS Utilities—Two utilities for use with TAPCIS, the popular automated user interface for CompuServe. TapFind finds any message or library catalog entry, searching on subject, from, to, text, section number or any combination. TapSplit splits message files into one file per forum section number. Both programs support message and library files created by TAPCIS and some other communications programs. File TAPUTL.ARC in Library 6.

David Peyton co-authored How to Get the Most Out of CompuServe *and* Advanced CompuServe for IBM PC Power Users. *His CompuServe User ID number is 76703,244.*

Rep of the Month

Bob Serio, a Business Administration major at Ohio State University, has been a CompuServe Customer Service representative for three years.



Greg Miller

Forums are favorites: *Serio*

Bob's favorite online areas are "the forums—excellent sources for learning by participating in discussions and asking questions—and the Executive News Service, which offers late-breaking news at your fingertips and the ability to create a clipping folder for stories you follow."

He suggests that CompuServe members "inquire about services they cannot locate. Also, while members may be perfect hosts, the proper response at a Host Name prompt is CIS."

Ask Customer Service

Q: I usually correspond with the same people in EasyPlex. Is there a way to keep a record of their names and User ID numbers?

A: The "address book" feature in EasyPlex is what you are looking for. With this feature, you can maintain an address book of up to 100 names and User ID numbers of the people you most often communicate with. Start your message by typing To: and the name of the recipient, and the address book will search for the correct name and User ID number to enter. Enter your own name in the address book so you will not be prompted for From: information when you send a message.

Q: How can I compose and send a message via EasyPlex?

A: There are several ways to create a message in EasyPlex. You can compose a message by choosing this option from the EasyPlex menu. With this method, you type your message while you are online, which is optimal if you are sending a short message.

If you are sending a longer message, you may wish to upload it from your microcomputer. If you do this, text messages must be in ASCII format and have a carriage return and line feed at the end of each line, and each line can be no longer than 80 characters. Binary messages can also be uploaded and sent but are not readable online.

Finally, you can pull a file from the Personal File Area by choosing this option from the menu. The file is automatically put into your EasyPlex area to be sent. Whichever method you choose, the message has a limit of 50,000 characters or 1,000 lines.

Q: What other electronic-mail services can I use through EasyPlex?

A: CompuServe's EasyPlex offers the capabilities to send messages through telex, fax and MCI Mail. Telexes can be sent to any Telex I or Telex II machine in the world, or you can send a telex to an MCI Mail subscriber.

The cost of a telex in the United States is $1.15 per 300 characters, while the cost of an international telex is determined by the country of destination and the length of the message.

A message sent to Group 3 facsimile (fax) machines in the United States costs 75 cents for the first 1,000 characters and 25 cents for each additional 1,000 characters. The cost of an international fax is determined by the country and the length of the message.

A message sent to an MCI Mail subscriber incurs a surcharge of 45 cents for up to 500 characters, $1 for 501 to 7,500 characters, and $1 for each additional 7,500 characters. More information can be obtained by typing HELP TELEX, HELP FAX or HELP MCIMAIL at the EasyPlex menu.

Q: Are there any hard-copy mail services available through EasyPlex?

A: Currently CompuServe offers CONGRESSgrams, a service that enables you to send a letter to your member of the US Senate or House of Representatives. Select the option from the EasyPlex menu to send a CONGRESSgram, enter the recipient's name and title, the text of the message, the subject, your name and your postal address. The message is made into a letter and sent through the US Postal Service. The cost of this feature is $1 per letter.

These answers and more are available in Customer Service's Question & Answer Database. You can find answers to questions about billing, logging on, using forums, sending EasyPlex messages, using the Personal File Area, setting up a Personal Menu and more. Type GO QUESTIONS at any prompt on the CompuServe Information Service.

Gift of Time

Online Today offers members the chance to win 10 hours of standard service connect time (a $60 value) by writing a 200-word essay on how they use CompuServe's Information Service.

The essay should be typed double-spaced and sent to *Online Today*, CompuServe Incorporated, 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, OH 43220, or via an EasyPlex message to 70003,3246. Please include your full name, address and User ID number.

Winning essays are published in *Online Today*.

Love Letters Online

Our commitment to our marriage calls us to communicate daily in written dialogue. Our love letters are an important part of our lives. When either of us is away on business, we miss the intimacy of exchanging letters each evening. This is solved by our laptop computer and CompuServe's EasyPlex.

During recent trips, each of us has written our letters and uploaded them to our EasyPlex address during the day. In the evening, each of us downloads the other's letter. The love and feelings we are able to exchange in this special way makes a distant city less lonely.

CompuServe makes the immediate exchange of our letters possible from anywhere—at a lower cost than express mail or long-distance phone calls.

Pete and Peggy Romfh
Aurora, Colo.

Read CompuServe News

Online Today Daily Edition covers the online community. Whether it's a forum conference announcement, a special promotion or a new product introduction, you can read all about it in the *Daily Edition*. To access news about the CompuServe community, type GO OLT-50 at any CompuServe Information Service prompt.

***COMPUSERVE THIS WEEK**	**OLT-50**
About Update	**OLT-60**
Community News	**OLT-80**
Conference Schedules	**OLT-120**
Letters to Editor	**OLT-30**
Online Today Guide	**OLT-351**
Previous Weeks' What's News	**OLT-270**
Uploads Updates	**OLT-3700**
What's New	**OLT-70**

Publish It!

Entry-Level Desktop Publisher

Timeworks
444 Lake Cook Rd.
Deerfield, IL 60015
312/948-9200

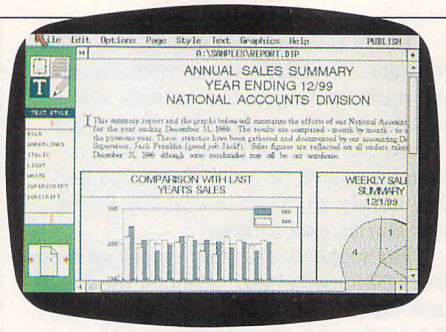
Computers: IBM PC, PC-XT, PC-AT, PS/2 and compatibles; Tandy 1000, 1400, 3000 and 4000.
Operating Systems: MS-DOS or PC-DOS version 2.1 or higher; PC-DOS 3.3 on PS/2 systems.
Media: Distributed on eight 5.25-inch diskettes; also available on 3.5-inch diskettes; requires two diskette drives or one diskette drive and a hard disk.
Copy Protection: None.
Required Peripherals: MGA, CGA, EGA, VGA, Hercules, Video-7 Vega Deluxe or AT&T DEB video with monitor; supports MSG Genius and Wyse/Amdek full-page monitors; supports most popular 9-pin and 24-pin, LaserJet-compatible and PostScript-compatible printers.
Other Requirements: Minimum 512K RAM; 640K required with EGA, VGA or Hercules video displays.
Optional Items: Hard disk; color monitor; mouse (strongly recommended); Timeworks' accessory packs (fonts, graphic clip art and design ideas).
System used for test: 512K Victor V286 computer with 1.2MB diskette drive, 20MB hard disk and EGA video adapter, EGA color monitor and Apple LaserWriter.
List Price: $199.95

Reviewed by Franklyn Jones

As the market for desktop publishing software matures, prices for the products continue to fall. Publish It! is among the newest desktop publishers in the low-price category and is designed for entry-level publishing applications. It certainly isn't in the same league as higher priced counterparts, but the package offers quite a bit of functionality.

Publish It is based on a runtime version of GEM, the Graphics Environment Manager from Digital Research. A separate GEM Desktop package is not needed to run Publish It. GEM is an icon-oriented front end, much like what you would find on an Apple Macintosh. As a result, Publish It presents the user with a true what-you-see-is-what-you-get interface.

Although a mouse is not required, you will find that using one is extremely



useful for moving around GEM and Publish It and for making selections from the various pull-down and pop-up menus. If you insist on avoiding a mouse, there are alternative keyboard commands to many mouse commands.

Creating a publication with Publish It takes five basic steps: defining the page layout, typing in text, entering graphics, polishing look (such as type size and font selection) and printing the final copy. In theory, Publish It's WYSIWYG capabilities mean there should be no trial-and-error printing.

When you start Publish It, the first thing you see is a white screen with non-printable column guides. This is called the Frame mode. The first step is to define the height and width of frames that will hold your text, using the column guides as reference points. Right away you can see the benefit of using a mouse since this would be a slow process using only the keyboard. The frames can be sized so that you can have any number or shape of columns on the page. If you are working on a publication where all pages are similarly laid out, you can store your frame definitions as a Master Page template for future pages.

Publish It can display on-screen vertical and horizontal rulers, which are helpful in designing page layouts. Even better, the rulers can display measurements in picas, centimeters or fractional inches. The screen normally displays page contents at actual size, so only a limited portion of a given page is visible at any one time. However, pressing various Alt key combinations lets you see a representation of the page as a whole, at half size, at double size or as two pages side by side.

After you complete the page layout, it is time to type in text. You may do so from the keyboard or by importing an existing file from any directory on your hard disk. I strongly advise the latter. In fact, it would be wise to avoid all document editing whatsoever after a text file has been imported. It is awkward, slow and frustrating to do most word processing tasks within Publish It. At best, Publish It is acceptable for such functions as search-and-replace, inserting soft hyphens or adding headers and footers.

Publish It can import any ASCII file or document files from Microsoft Word, WordStar, WordPerfect, GEM 1st Word Plus, Timeworks' own PC Quintet and some other word processors. When such specific word processor formats are imported, all attributes such as boldfacing and underlining remain intact, which is a nice feature. Publish It will even translate ASCII quotation characters in a document into the opening and closing quotation marks used in standard typesetting.

Graphics can be added to a Publish It document from various third-party graphics applications, including Lotus 1-2-3, GEM Draw, GEM Paint, GEM Graph and Z-Soft's PC Paintbrush. In addition, the program comes with approximately 200 pieces of clip art stored in 23 files. Once artwork has been imported into a publication, Publish It lets you scale it horizontally or vertically to position it properly.

If you're inclined to use freehand art, you'll be glad to know that Publish It comes with a limited set of drawing tools for creating circles, squares, angles or freehand drawings. Drawing functions aren't as sophisticated as what you might find on the Macintosh, but they could be useful.

The last step before printing a publication is to add the "finishing touches." Unfortunately, the chapter in the documentation on adding these is only one page long and is decidedly vague.

Printing a document is simple and straightforward, taking just a few selections from the print options menu. The speed with which it is printed depends on both the printer being used and the complexity of the document itself.

Publish It's documentation comes in one fairly concise volume. It starts with a brief tutorial, then follows the five-step process described. In addition, there are 47 pages of appendixes and an index.

For its price, Publish It is not a bad publishing tool, and it does everything it claims. However, I see the program's link to GEM as a liability rather than an asset. While GEM provides a nice WYSIWYG interface, it also makes a mouse a near necessity, which I do not enjoy. And GEM's command structure can be too time consuming. I would have preferred to see effective use of function keys (not used at all now), menus and keyboard toggle

switches to perform commands much faster. Also, the basic word processing capabilities of Publish It must be improved in both speed and ease of use.

On the plus side, Publish It provides good features, including excellent laser printer and dot-matrix printer support, style sheets, character kerning, line leading, text and graphics importing and excellent screen emulation of the printed page that obviously is GEM's strongest point.

If you can meet the ideal hardware requirements with a hard disk, mouse and graphics monitor, and if you are interested in testing the waters of desktop publishing without committing yourself to the truly costly packages, Publish It is a versatile, low-cost option that deserves a close look.

Franklyn Jones was formerly the managing editor of Interface Age *magazine and editor and chief of* IBM PC Update *magazine. He has written articles for various computer publications, is a regular contributor to* Online Today *and serves as a marketing and communications consultant.*

Graphic Edge

Provides Charting for Apple Computers

Pinpoint Publishing
5865 Doyle St., #112
Emeryville, CA 94608
415/654-3050

Computers: Apple IIe, IIc and IIgs.
Operating Systems: ProDOS.
Media: Program comes in both 5.25-inch (three diskettes) or 3.5-inch (one diskette) formats.
Copy Protection: None.
Required Peripherals: None.
Other Requirements: 128K RAM.
Optional Items: ImageWriter or Epson printers are supported; hard disk or unidisk is recommended.
System Used for Test: 512K Apple IIgs with one 5.25-inch diskette drive, one 3.5-inch diskette drive and Apple Imagewriter printer on Appletalk network.
List Price: $89

Reviewed by Brian D. Monahan

If there are any standards in the fast-changing world of personal computing, AppleWorks is one. While it is not possible to create graphs to illustrate data entered into an AppleWorks spreadsheet, there are several programs on the market that will do that. Graphic Edge is a good one. The program goes beyond the ability to merely produce graphs and enables you to embellish those graphs with other graphics and make the entire picture part of an AppleWorks document.

It is possible to establish a "hot link" between Graphic Edge and an AppleWorks spreadsheet. Then, when you change data in a spreadsheet, the graph's appearance changes automatically. Eight graph types may be plotted: point, line, bar, stacked bar, area, hi-lo, pie and X-Y, and 10 different graphs may be stored with any spreadsheet. Because the same data may be viewed in various graphic formats, you can decide which format makes the most effective presentation of your data.

To take advantage of Graphic Edge's charting capabilities, begin with the AppleWorks spreadsheet and load it onto the Graphic Edge desktop. The first time you do this, the program will prompt you for a file name for the Graph Definition File. This is not the spreadsheet file. It is a new file that will store information about the graphs you create to go with that spreadsheet. It is here that the "hot link" is established.

Creating graphs is easy. Users experienced with Lotus 1-2-3 or other spreadsheet/graphics programs will find the interface familiar. After choosing the file for which you wish to create graphs, you are prompted for all necessary responses. Basically, creating a graph involves selecting the type of graph from those available and highlighting the data ranges to be graphed. Up to 10 sets of data points are possible, though the screen gets crowded displaying that many, as is true with any graphing program.

Once data points have been selected and the graph has been plotted, you can take advantage of other options offered by Graphic Edge. These include the ability to set your own scale for the graph or to use the default the program provides. You can instruct the graph to print appropriate labels along the X and Y axes and to give the entire graph a title. It is also possible to exhibit a legend identifying each range. In a matter of 10 minutes, I developed a graph that showed the performance of three salespeople during one year. I then went back to the spreadsheet, computed the averages, returned to the Graphic Edge file and put that line in the graph, too.

One of the program's most impressive features is its ability to add text at any point on the graph in a variety of fonts.

It is also possible to import an illustrative graphic from disk and place it at any position on the graph. Graphics may be imported in various forms, including bit-mapped graphics and Print Shop illustrations. Once a graphic has been selected, it may be moved around the screen with arrow keys until an appropriate location is found and it is locked in place with the Return key.

User-defined drawings may be added to Graphic Edge graphs. These are created in the drawing environment where a set of tools is provided to help create drawings. The tools include various brushes and patterns for painting, shapes such as ovals and rectangles that can be sized and assorted fonts for text.

The program has built-in utilities that make life easier. From within the program, you can create subdirectories, rename files and initialize disks. One feature that those who develop sophisticated graphics will appreciate is the ability to turn off the "re-draw" mode. If not turned off, the program works slowly because the entire screen is redrawn even when small changes are made. Throughout, program features will seem familiar to AppleWorks users since the program uses an AppleWorks-like interface.

The documentation is excellent and not overwhelming. The manual is approximately 100 pages long, and it contains a comprehensive index and numerous screen displays to illustrate the concepts that are explained. The first chapter covers program installation, and the second includes a short, easily followed tutorial that will get you started.

The 3.5-inch disk package includes a program called the Graphic Edge GS Utility that will redraw Graphic Edge object files in the IIgs's super high-resolution format. But this program requires 768K of RAM.

The final task is printing the graphs produced by the program. This is easy to do from the menu, which prompts you every step of the way. It is also possible to do a "quick print" if you are sure that all settings are correct. I was well satisfied with the output quality on our ImageWriter, just as I was well-satisfied with Graphic Edge's overall quality and ease of use.

Brian D. Monahan is associate vice president of Iona College in New Rochelle, N.Y., where he also teaches computer science courses. His CompuServe User ID number is 70007,3000.

Business Symbols, Quick-Charts and Designer Galleries

Added to Harvard Graphics

Software Publishing
P.O. Box 7210
Mountain View, CA 94039-7210
415/962-8910

Computer: IBM PC, PC-XT, PC-AT, PS/2, 3270 PC; AT&T 6300; Compaq; Epson Equity I, II, III; Leading Edge Model D; Tandy 1200 HD & 3000; Toshiba T3100; Panasonic Partner series; Zenith Z-158 & Z-200; Olivetti M24.
Operating Systems: PC-DOS or MS-DOS version 2.0 or higher.
Media: Supplied on 5.25-inch and 3.5-inch diskettes; require two diskette drives or one diskette drive and a hard disk.
Copy Protection: None.
Required Peripherals: Printer; EGA or CGA adapter required for Designer Galleries.
Other Requirements: Minimum 512K RAM; Hercules, IBM CGA, EGA, VGA, Video-7 Vega Deluxe or Quadram graphics board video adapter with monitor; hard disk required with 5.25-inch drive system; Harvard Graphics program is required to use these products.
System used for test: (1) Toshiba 3200 laptop computer. (2) 1,024K Tele-Video TeleCat-286 computer with Hercules Graphics Card Plus, two diskette drives, Control Data 40MB hard disk, Okidata 293 printer and Hewlett-Packard LaserJet Series II printer; running PC-DOS 3.3.
List Prices: $99 for each add-on.

Reviewed by William J. Lynott

Harvard Graphics (reviewed in *Online Today*'s September 1988 print edition) is at the top of the heap when it comes to generating business graphics. Its power and flexibility enables even the most inartistic klutz to produce printed graphics, slides and overheads that reek of professionalism.

Ironically, the power and flexibility that is a major strength of this software classic also can be a weakness. The program has such complex capabilities that the average user doesn't have the time or the inclination to plumb their depths. And that is a good justification for the three Harvard Graphics accessories reviewed here. They make it easy to create eye-popping graphics without benefit of training in graphic design.

One unfortunate byproduct of state-of-the-art desktop publishing hardware and software is that they turn loose anybody with the necessary equipment to generate whatever abominations they dream up. So the Harvard Graphics accessories series is designed to help avoid turning out the type of "screen clutter" that would weaken the effectiveness of graphics.

Business Symbols is a set of 300 graphic images that round out the collection included with Harvard Graphics itself. Although the latest Harvard Graphics (version 2.1) includes 200 symbols, many users may find that "just the right one" often is not included. As a diversified library of drawings in Harvard Graphics' own format, Business Symbols are neatly divided into generic groups that ease finding the one you want. The groups are 3-D Objects, Buildings, Chemical Symbols, Communication Symbols, Computer Symbols, Elements, People, Math Symbols, Office Symbols, Packages, Traffic Symbols and Weather Symbols.

Like their counterparts in the main Harvard Graphics package, Business Symbols are crisply drawn and have the look of modern illustrations, unlike others I've seen that are nothing more than scanned images of holdovers from 1950s or '60s drawings.

Importing a symbol into a Harvard Graphics file is easy. Select Draw/Annotate from Harvard Graphics' main menu; select Symbol from the Draw menu; then choose Get. Type the drive and directory containing Business Symbols and press the Return key. Select a group containing the symbol you want, and Harvard Graphics displays all symbols in that group. Move the cursor to the symbol you want and press the Return key. Once moved into your chart or drawing, the symbol may be manipulated and modified through regular Harvard Graphics' draw/annotate procedures.

Quick-Charts is a large assortment of predesigned charts and templates created by people who know how a chart should look to be eye-pleasing and informative. This well-designed series includes model area charts, bar charts, line charts, high/low/close charts, pie charts and word (text) charts.

Each chart has been saved on disk as a standard Harvard Graphics chart and as a template. The package also includes six chartbook files and a Preview Gallery that lets you take a quick look at various charts to find just the type you need. The Slide Show feature of Harvard Graphics is used to good advantage here as a way to preview charts without lading each one individually.

Load a Quick-Charts file the same way you load any Harvard Graphics file. Select Get/Save/Remove from the program's main menu; then select Get Chart. Enter the drive and directory where you stored your Quick-Chart files, point to your selection, and press the Return key. From there, simply substitute your data and text in place of information stored with the sample. If you like the way the sample chart looks, you can leave it as is, or you can make further selections among type styles, type sizes, legend placement and other customizing features.

The sample charts are so diverse that you should find one to suit almost any purpose. Each type of chart includes samples laid out with X axis labels in time increments (such as month or year) as well as numerical increments. The accompanying manual clearly illustrates each sample chart and gives its file number, so you can locate and load it with a minimum of fuss.

Quick-Charts offers two major advantages to busy users. First, you will save much time when you don't have to experiment with type sizes, placements and other options. Second, using a Quick-Chart gives you the confidence that your work incorporates sound design principles which, in turn, means your charts should be more effective.

Designer Galleries is similar to Quick-Charts but is designed for color operation. You must have an EGA or VGA compatible color monitor and adapter to use it. The program comes with palette files for Polaroid Palette (Ektachrome) and Matrix film recorders.

Like Quick-Charts, Designer Galleries offers a series of professionally designed charts and templates. You simply select the chart that suits your needs and then insert your own data. With Designer Galleries, you may direct output to a printer, plotter or film

Go Online for Hardware Reviews

The following hardware review is available this month in *Online Today Daily Edition* (GO OLT-220).

ViaNet Local Area Network
Manufacturer: *SoftNet Communications Inc.*
Computers: *IBM compatibles; Zenith.*

recorder, as with any chart created by Harvard Graphics.

If you work in color, Designer Galleries can be a valuable addition to your toolbox because color choice is as important as basic design for producing effective business graphics.

Both Quick-Chart and Designer Galleries require that you run a built-in installation program to install their files on your hard disk; you cannot just copy the files from the program diskettes. The extra effort is worth it, though, because the product is a nicely coordinated package that makes manual selection or automatic preview of available charts an easy process.

I see no reason to buy both Quick-Charts and Designer Galleries. Pick one or the other depending on whether you work in color or monochrome. Then add Business Symbols, and you've got a powerful, versatile supplement to Harvard Graphics.

William J. Lynott is president of W.J. Lynott Associates, a management consulting firm in suburban Philadelphia. His CompuServe User ID number is 70007,420.

Micro Planner 4.0:

Project Management with a Mouse

Micro Planning International
235 Montgomery St., #840
San Francisco, CA 94104
415/788-3324

Computers: IBM PC, PC-XT, PC-AT, PS/2 and compatibles.
Operating System: PC-DOS or MS-DOS version 3.0 or higher.
Media: Supplied on 5.25-inch diskettes or 3.5-inch diskettes; requires one diskette drive and a hard disk.
Copy Protection: None.
Required Peripherals: Graphics display capable of supporting Microsoft Windows.
Other Requirements: Operates only under Microsoft Windows 2.x; requires 512K of RAM and a mouse.
Optional Items: Printer or pen plotter compatible with Microsoft Windows.
System used for test: 640K Compaq Deskpro 286 with one 1.2MB diskette drive, one 360K diskette drive, one 40MB hard disk, Microsoft Mouse, Vega VGA adapter, NEC MultiSync II monitor and Hewlett-Packard LaserJet Plus printer; running MS-DOS 3.3 and Microsoft Windows.
List Price: $595

Reviewed by Harry Green

Project management is inherently a data-intensive profession. There are lists to maintain, reports to write and charts and graphs to prepare, making project management an ideal computer application. The use of a personal computer is further advanced by the fact that project management has a recognized set of tools and techniques, so software can be designed to fit the way managers work. Micro Planner version 4.0 implements project management methods with an interesting twist: It operates under Microsoft Windows 2.x. The marriage is natural because Micro Planner originally was developed for the Macintosh.

Windows is particularly effective for graphics programs, and the PERT chart is a tool used almost universally by project managers. The acronym stands for Program Evaluation and Review Technique, and the output resembles a program flow chart with circles representing events and interconnecting arrows depicting activities. Some programs reverse the roles of arrows and circles, but the principle is the same. A PERT chart shows at a glance the work to be done and the precedence between activities. Micro Planner draws PERT charts and displays the critical path, which is the longest chain of events through the network.

Another frequently used graphic tool is the Gantt chart, which represents activities as bars positioned over a calendar scale to show start and complete dates.

When you start Micro Planner, you're presented with a blank window having a circle in the center. If you click the mouse on the circle and drag it to either side, you create a two-node network. The program opens so you can insert information such as the title and duration of the activity and the resources required. Just as no program flow chart works right the first time, neither does a project network, so Micro Planner lets you add, delete and rearrange events and activities.

The difficulty with using a personal computer for a complex network is that you clutter the screen with so much information that it is difficult to keep it all mentally organized, and it is impossible to view everything on one screen. You can use Window's scroll bars to traverse the network, but even this leaves too many details to wrap your mind around.

Micro Planner solves this problem neatly. When you select an activity, it is automatically centered on the screen. After completing a network, you select a function that effectively compiles the network, revealing logic errors and overcommitted or undercommitted resources. At this point you can display a compressed PERT chart that lacks details but shows relationships between events. The program shows where pages will break when the diagram is printed or plotted with a selected output device.

Micro Planner supports a comfortable range of pen plotters, laser printers and dot-matrix printers. For large projects, a plotter is the most effective because it displays more real estate without trimming and pasting. I use a laser printer with excellent results, but as with all bit-mapped graphics, printouts take time. The program includes a spooler that releases the computer so it can continue working on the network while it prints.

The program uses graphics in other effective ways, of which resource analysis is a good example. Resources can be individuals, teams, equipment or whatever you define them to be. By advancing through pull-down menus, you can identify resources and assign them and their costs partially or totally to activities. One report shows a histogram of the hours allocated for a resource, with overcommitted time highlighted. You have several options for solving the problem; revise the plan, reduce the time allocated to an activity, expand the resource or change the calendar so the resource works more hours or more days.

There is no magic about Micro Planner or any other project management program. It just happens to pick out weak spots in the plan that you might otherwise overlook, it produces consistent reports, and it lets you change the plan and view the results with a minimum of manual effort.

Micro Planner is one of the best project management programs I've used because it works the way a project manager thinks and because it makes particularly effective use of Windows' strengths. You won't find it easy to use at first unless you're acquainted with Windows, but when pull-down menus and mouse clicks become second nature, you'll find Micro Planner is a tool that will improve your productivity and simplify your job.

Harry Green is a free-lance writer from Portland, Ore. He writes about telecommunications, office automation and personal computer-related topics. His CompuServe User ID number is 70007,431.

Home Designer CAD System

Optimized for the Commodore 128

Briwall
P.O. Box 129
Kutztown, PA 19530
215/683-5433 or 800/638-5757

Computer: Commodore 128.
Operating System: Commodore DOS.
Media: Requires one Commodore-compatible 1571 disk drive.
Copy Protection: None.
Required Peripherals: Monitor; mouse or joystick; printer or pen plotter for output.
Other Requirements: None.
Optional Items: Second disk drive.
System used for test: Commodore 128D with Commodore 1571 disk drive, Commodore 2002 monitor, Progressive Peripherals & Software's Device One printer interface, Epson RX-80 printer, Wico Command Control Joystick and Contriver Enterprises mouse.
Retail Price: $49.95

Reviewed by Cheryl Peterson

Home Designer is a computer-aided design package developed especially for the Commodore 128. It uses the full 128K of memory and uses the extended BASIC that Commodore provides with the C128. Rather than being a Commodore 64 program that had been rewritten for the 128, Home Designer never was limited to the restrictions imposed by the 64.

The program supports either joystick or mouse input and can use both Commodore and third-party mice. Some frequently used commands also are available on function keys, so you can access them without going through the mouse menu. If you are a keyboard-oriented person, you can type all commands and their parameters, and a keyboard overlay is provided to ease using the function keys.

Although the program is a drawing package, it doesn't support the kinds of drawing modes most Commodore owners are familiar with. There is no "freehand" mode. Instead, drawings are created using commands that draw figures into your creation. A menu is provided so you may chose commands from it, but the commands then are placed into the command buffer at the bottom of the screen. A command then is further defined by adding parameters.

The most appropriate comparison would be with a spreadsheet program such as SwiftCalc. You enter the position on the screen where you want your line, box, circle or other element. Then you enter the specifics needed to define that element. When you finish defining it, the program draws it on the screen at the proper location. Additional editing commands then let you move an element or change its definition.

Graphics commands include insert, translate, delete, rotate, trim, divide, mirror, offset, change, verify and zoom. The program also uses commands to change the screen display, program parameters and drawing data. Since you must modify an element by using commands, it is helpful that you can review previous commands. Also, the verify command can be used to view the individual commands used to create each entity.

Home Designer drawings can have up to five layers with 400 lines, 100 circles and 100 text strings in each layer. However, memory limitations may prevent you from getting five full layers if each contains the maximum number of elements.

The program also provides element library support, so frequently used items can be saved and then called into new drawings without having to recreate each from scratch. The package itself comes with one library of predrawn architectural elements.

Home Designer also supports scaled text within drawings, and text files can be imported from PaperClip or other word processors that save files in sequential format.

Unlike bit-mapped drawing programs, Home Designer actually increases detail if you "zoom in" on a drawing section. Scaling is an inherent feature in this kind of drawing, so preparing things such as floor plans and mechanical drawings is much easier than with a standard "steer with a joystick and draw cardboard figures" package. For precision work, a program like Home Designer is far more accurate.

The manual is adequate, but a few more tutorials would add to the user's understanding of how the program works. The system overview contains encyclopedic list of commands and instructions for using them, and a glossary helps people unfamiliar with CAD terms. Although the index is useless, a section new users will find useful is the appendix on basic 7.0 DOS commands.

Home Designer supports most commonly used printers and interfaces. The version I received also supports two pen plotters, Hewlett-Packard's 7470A and Commodore's 1520. Printers and plotters must be connected through the serial port via an appropriate interface. You will have to go through a short configuration procedure to define the printer or plotter and disk drive you are using, but the manual is good at explaining the process.

The screen represents a page measuring 22 by 16 inches. If you scale down the picture by half, the printout will be 8 by 11 inches and printable on a regular dot-matrix printer. Resolution depends on the printer used.

I didn't find Home Designer easy to use, but the functions it performs are impressive. You can get fine detail not possible with bit-mapped drawing programs. While the price seems a little high, the software offers likable features.

Cheryl Peterson, a free-lance writer from Miami Beach, writes reviews for several computer magazines. Her CompuServe User ID number is 72366,2645.

Go Online for More Software Reviews

The following software reviews are available this month in *Online Today Daily Edition* by typing GO OLT-230 at any CompuServe Information Service prompt. Many daily-edition and print-edition software reviews are supplemented with GIF graphics that may be viewed in or downloaded from Library 6 of the *Online Today* Readers' Forum (GO OLTFORUM).

Personal Accountant Bookkeeping
Manufacturer: *Softsync Inc.*
Computers: *Apple II, Commodore 64/128 and IBM compatibles.*

SuperExpert
Expert System Development
Manufacturer: *Softsync Inc.*
Computers: *IBM compatibles and Macintosh.*

Clip Art Graphics
Manufacturer: *Styleware Inc.*
Computer: *Apple IIgs.*

ManyLink
Intercomputer File Transfers
Manufacturer: *Net Line*
Computers: *IBM compatibles and laptops.*

Remote2 Remote Control System
Manufacturer: *DCA/Crosstalk Communications*
Computers: *IBM compatibles.*

Textmate Word Processor
Manufacturer: *Professional Software*
Computers: *IBM compatibles.*

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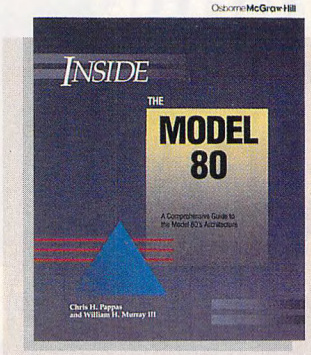
Online Book Reviews

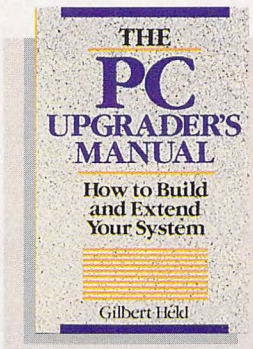
Following are summaries of book reviews available for reading this month in *Online Today Daily Edition*. To read the complete reviews, type GO OLT-240 at any CompuServe Information Service prompt.



Inside the Model 80

By Chris Pappas and
William H. Murray III
Osborne McGraw-Hill, 1988
434 pages, $22.95 (softcover)

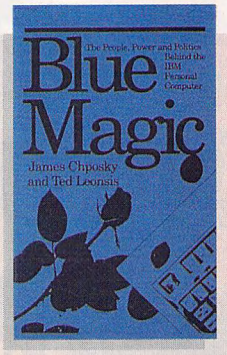
Although this book could be more in-depth in its coverage of the most powerful model of IBM's PS/2 computer series, reviewer Franklyn Jones says it is worth considering as a companion book for the Model 80. Topics of particular interest are MS-DOS, OS/2 and desktop publishing. *GO OLT-5010*



The PC Upgrader's Manual

By Gilbert Held
John Wiley & Sons, 1988
227 pages, $19.95 (softcover)

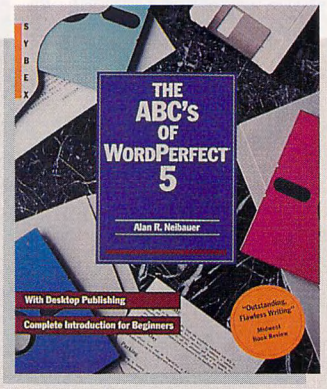
Reviewer Harry Green calls this the ideal book for those who would rather smell hot solder rosin than watch a PC graphics display. The book expertly tells you how to build and extend your computer system. *GO OLT-5040*



Blue Magic: The Power, People and Politics Behind the IBM Personal Computer

By James Chposky and Ted Leonsis
Facts on File Publications, 1988
228 pages, $19.95 (softcover)

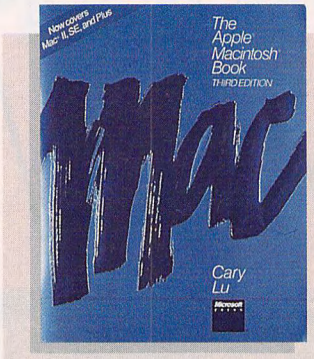
Based on exhaustive research behind the corporate curtain, this book tells the fascinating tale of the development of the IBM PC and the risk-taking and imagination that Big Blue exercised to create such a successful machine. Reviewer Paul A. Gilster calls it a riveting look behind the scenes. *GO OLT-5050*



The ABC's of WordPerfect 5.0

By Alan R. Neibauer
Sybex, 1988
283 pages, $17.95 (softcover)

With simple, easy to follow lessons, the author of this book enables new users of WordPerfect's latest release to build on their skills and get beyond the basic mechanics of word processing. Reviewer James Moran says that the book is ideal for those who want to get up to speed quickly with WordPerfect 5.0. *GO OLT-5020*



The Apple Macintosh Book

By Cary Lu
Microsoft Press, 1988
398 pages, $21.95 (softcover)

In this third edition of a classic compilation, the author presents a diverse range of hardware and software that Macintosh owners might use to enhance their systems. Calling the book technical but not boring, reviewer Sharon Weizenbaum recommends it for owners of older Macs. *GO OLT-5060*

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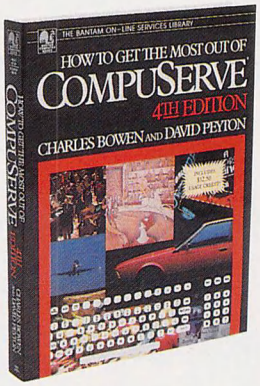

How to Get the Most out of CompuServe, 4th Edition

Online Today columnists Charles Bowen and David Peyton have updated their bestselling guide to CompuServe with even more invaluable tips and tricks to save you time and money. Includes previews of system updates and $12.50 usage credit. $21.95. From Bantam Books GO WB.

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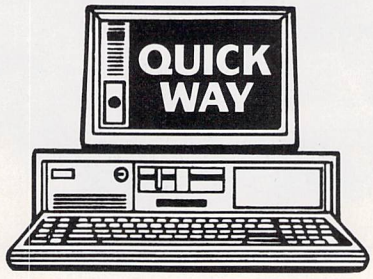

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Dean Witter Reynolds	93	186	404

* Includes Schwab's 1988 rate increases. (Telephone Survey 3/88)

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Macintosh Package for Communications

Practical Peripherals has introduced the Macintosh Communications Package featuring the company's PM2400 SA external modem, cable and the MicroPhone (version 1.1) communications program. The package is 100 percent Hayes compatible and functions at 300, 1200 and 2400 baud. The modem incorporates auto-dial, auto-answer, pulse or tone dialing, no internal or external switches, full- or half-duplex operation, separate line and set connectors for data and voice calls, and a volume controlled speaker.

For information, contact Practical Peripherals, 31245 La Baya Dr., Westlake Village, CA 91362; 818/706-0333.

ZoomSend Communications

ZoomSend from Zoom Telephonics is unique compress-and-send modem software that lets computer users communicate at up to twice the normal speed.

The program facilitates sending and receiving files with a modem, while saving time and telephone charges. Zoomsend compresses files, in effect giving a 2400-baud modem the speed of 4800 baud.

For information, contact Zoom Telephonics Inc., 207 South St., Boston, MA 02111; 617/423-1072.

Font Effects

Font Effects from SoftCraft creates display and headline fonts from existing soft fonts. It can be used to produce multicolor fonts that Xerox Ventura Publisher can print on laser printers for offset reproduction.

The general technique is to create companion fonts with Font Effects such as an outline font and a companion filler font, and then print the same character in the same location using the two different fonts.

The retail price is $95.

For information, contact SoftCraft Inc., 16 N. Carroll St., Suite 500, Madison, WI 53703; 800/351-0500 or 608/257-3300.

Zoom/Modem

A Hayes-compatible, 2400-baud modem has been introduced by Zoom Telephonics.

Zoom/Modem MX uses digital signal processing to provide clean data transmission. Features include auto-dial and auto-answer, on-board speaker with volume control, call progress tone detection, adaptive equalization and lightning protection.

The retail price is $199. A special Macintosh package is available for $219 and includes Quick Link communications software.

For information, contact Zoom Telephonics Inc., 207 South St., Boston, MA 02111; 617/423-1072.

Mac Data Display

Computer Accessories has introduced the Mac Data Display, a liquid crystal display projection panel that projects Macintosh-generated images to a large screen or wall via an overhead projector.

Mac Data Display is an electronic transparency panel that fits on top of any standard overhead projector and connects to the video port of the Macintosh, providing an easy, effective way to share data, perform training sessions and give presentations. The retail price is $1,499.

For information, contact Computer Accessories Corp., 6610 Nancy Ridge Dr., San Diego, CA 92121; 619/457-5500.

Toshiba Laptop Modem

Anchor Automation has introduced a 2400-baud modem for use in Toshiba laptop computers.

The Anchor 2400TLT is constructed with only HCMOS components to eliminate heat and provide for a cleaner signal. Costing $299, the modem is 100 percent Hayes compatible.

For information, contact Anchor Automation Inc., 20675 Bahama St., Chatsworth, CA 91311; 818/998-6100.

Fastcomm Modem

Fastcomm Communications has introduced the FDX 9624, a high-speed modem costing $899.

The unit is a full-duplex, 9600-baud modem designed for interactive and rapid file transfer applications. It features no interactive delay, instant screen response, sharp characters and compatibility with V.22bis, Bell 212A and Bell 103 modems.

For information, contact Fastcomm Communications Corp., 12347-E Sunrise Valley Dr., Reston, VA 22091; 800/521-2496 or 703/620-3900.

Go Online for More Product Announcements

The following new product announcements are available this month in *Online Today Daily Edition* by typing GO OLT-250 at any CompuServe Information Service prompt.

Spinfont, *a program to create high-quality curved and slanted text images from Fontware typeface outlines, SoftCraft Inc.*

TurboTax, *income tax preparation program for the IBM PC and compatible computers, ChipSoft.*

DeluxeWrite, *word processing program for the Apple IIgs, Electronic Arts.*

MacDiskManager, *software product for the automatic management of Macintosh disks, Weber and Sons Inc.*

Safe Watch, *emergency power monitoring software for the IBM PC, PC-XT, PC-AT and compatible computers.*

PrintRite, *printing program for portable and laptop computers, Rite Software Inc.*

Immunetec PC, *hardware anti-virus vaccine, Zeus Corp.*

RightWriter (version 3.0), *word processor for the IBM PC and compatible computers, RightSoft Inc.*

Make Money With Your PC

A Revolutionary Software System, designed for maximum profits with minimum setup, now transforms any IBM PC/XT/AT or compatible computer into a secure, reliable Bulletin Board and Information Host System.

Subscription Systems throughout the free world are presently being used in dial-a-date and matchmaking applications, for multi-user databases and multiple listing endeavors, on-line order taking, along with scores of other lucrative telecommunications tasks.

To learn more about this unique, self-perpetuating opportunity that can adapt to both voice and data environments, contact: PC/WORKS at (805) 654-0724 or FAX (805) 650-0195.

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NEW! Lotto Picker™ Plus v2.1 stores winning Lotto & Pick 3/4 numbers & uses probability analysis in order to select what might be your million $$ ticket. Guaranteed to work for all lotteries worldwide. Not copy-protected. For IBM, 64k Apple II, & C64/128 **$34.95** (+5.55 sh). 3.5" add $10. **GE RIDGE**, 170 B'dway, #201OL, NYC 10038. **Orders 1-800-634-5463 ext. 293**. Info 718-317-1961.

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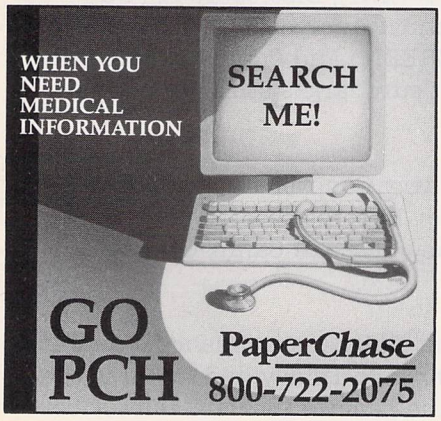

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Guidelines to Requesting Information Through OLI

Online Inquiry

Online Inquiry is *Online Today*'s electronic version of the traditional reader inquiry card. To request additional information about products or services described in *Online Today*, simply access CompuServe and type GO OLI at any prompt.

CompuServe Page OLI-1
ONLINE TODAY ADVERTISERS
ONLINE INQUIRY (OLI)
1. OLI Instructions
2. Online Today Display Ads
3. Print Edition Reviews
4. Shopper's Guide Mini-Ads

Display Ads

GO OLI-160. Inquiries to this section will be followed by a brief description of the *Online Today* ad. To request additional printed information, simply enter your name and address at the prompts. OLI will add your User ID number and electronically forward your request to the appropriate advertiser(s). The names, addresses and User ID numbers will also be forwarded via US Mail at the end of each month.

CompuServe Page OLI-160
ONLINE TODAY ADVERTISERS/OLI
1. Feb. 1989 Advertisers
2. Jan. 1989 Advertisers
3. Dec. 1988 Advertisers

Editorial Articles/Reviews

At the end of each electronic version product review, you'll be asked if you wish to request further information through the Online Inquiry system. A "yes" response will let the system prompt you for your name, address and other information so that your request can be forwarded to the appropriate company. If you respond "no," the system will return you to the previous menu.

To request information about products reviewed in the print edition, GO OLI-280 and select the appropriate listing, such as February Hardware Reviews. At the next menu, select the product you're interested in. If you answer "yes" at the question prompt, the OLI system will prompt you for the necessary information.

Requests to these sections will be stored and forwarded by traditional mail once each month.

CompuServe Page OLI-280
REVIEW LISTINGS/PRINT EDITION
1. Feb. Hardware Listings
2. Feb. Software Listings
3. Feb. New Product Listings

Shopper's Guide

GO OLI-70 to get information about *Online Today*'s mini-ad program.

To request information from Shopper's Guide advertisers, follow the instructions outlined in each ad.

CompuServe Page OLI-70
SHOPPER'S GUIDE
1. About Shopper's Guide
2. Rates and Information

***Note:** Additional requests during the same session will not require you to re-enter your name and address.

UPDATE

Shop in The Electronic Mall® for Valentine Gifts

Browse The Mall's Valentine Gift Giving Guide featuring 50 items in four categories: Cupid's Choice, Seductive Suggestions, Hearts & Flowers and The Way To His Heart. Order roses and carnations via Teleflora from Simon David, gourmet chocolates from Godiva or the Love-Struck Garfield Bouquet from Walter Knoll Florist. Harris' Scent-Sations and Bloomingdale's offer perfumes including Passion, Obsession and Giorgio of Beverly Hills. GO MALL

Send CUPIDgrams via EasyPlex

CUPIDgrams, personalized Valentine greetings, can be created in a regular message format or a love design and sent to anyone with a postal address in the United States. CUPIDgrams cost $2 each, including printing and postage. GO EASY

CompuServe Responds to Member Feedback about Public Access

In response to feedback from CompuServe members, Public Access is being removed from the CompuServe Information Service. Members are encouraged to explore CompuServe forums for uploads, and EasyPlex to transmit files.

CompuServe offers hardware and software forums for most computer models. In addition, forums cover interests including hobbies, health, business and entertainment. To locate a forum managed by professionals in your field, type FIND and your interest (FIND SCUBA, for example) at any CompuServe prompt. For more information on using forums, access the Practice Forum (GO PRACTICE), which is free of connect charges.

Effective Wednesday, March 15, EasyPlex will permit transmission of binary messages up to 256,000 bytes. EasyPlex should be used in place of Public Access to transfer files among members. Also effective March 15, uploads will no longer be permitted into Public Access. Files may be downloaded from Public Access through March 30, when Public Access will no longer be available.

Mark Calendars for March Financial Promotion

Executive Option financial products, including Ticker Retrieval (GO TICKER), Disclosure II (GO DISCLOSURE), the Institutional Brokers Estimate Survey (GO IBES), Return Analysis (GO RETURN), Current Market Snapshot (GO SNAPSHOT), Securities Screening (GO SCREEN) and Company Screening (GO COSCREEN) will be available to all members during March. Product surcharges still apply.

Fantasy Baseball Warms Up for 1989 Season

Fantasy Baseball team applications can be sent to the attention of Harry Conover in the Sports Forum Message Section 10 through Sunday, April 2. Include American or National league preference. The champion will receive free registration for the Sox Exchange Fantasy Baseball Camp. GO FANS

OAG Introduces Daily Travel News

The Official Airline Guide Electronic Edition offers Travel Management Daily®, a published summary of travel industry news. Travel Management Daily is updated Monday through Friday and features the latest information on airlines, car rental companies, hotel properties and general tourism. Subscribers can keep abreast of news that impacts travel plans. GO OAG

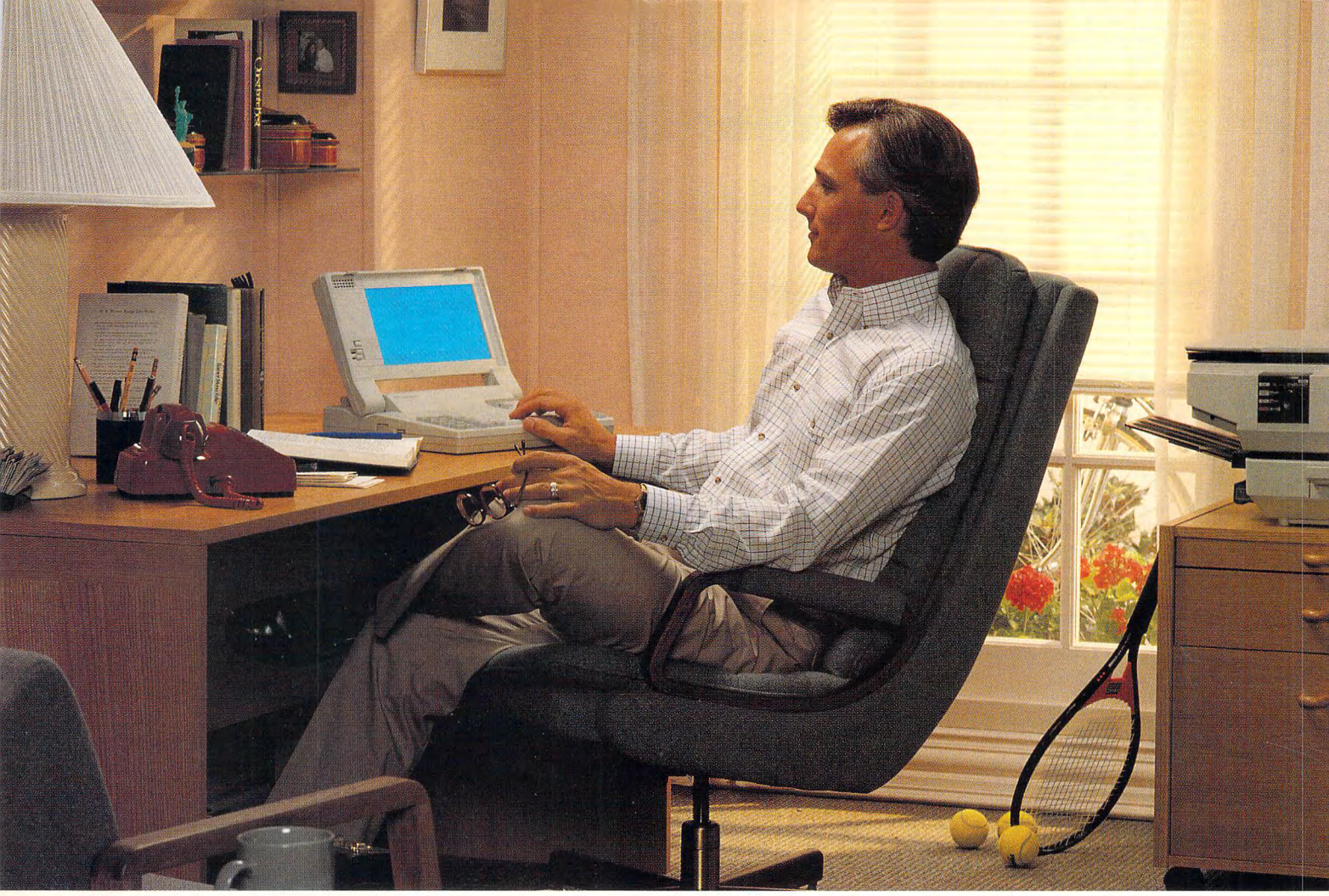
Eaasy Sabre Offers Free T-shirt

Eaasy Sabre is offering a free T-shirt to members who book reservations online and fly between Dec. 12, 1988 and March 31, 1989. For more information, complete the online application to use Eaasy Sabre, Option 5. GO SABRE

IQuest SmartSCANs Reduced 40 Percent

Effective immediately, charges for all SmartSCANs on IQuest are $5 per scan—a $4 savings. All other IQuest charges remain the same.

SmartSCAN helps identify potentially relevant databases for IQuest searches. To use SmartSCAN, enter a search term describing a topic. SmartSCAN displays a menu of databases appropriate to the topic and the number of articles containing the search term in each. GO IQUEST



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The Bargain Finder℠ feature sorts through over 35 million fares to find the lowest possible one for you. You can make your reservations on-line and then pick up your tickets at any travel agency, American Airlines City Ticket Office or airport ticket counter. You can even get them through the mail.

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In addition to its low price, the SupraModem 2400i will save you money by letting you communicate at 2400 baud, thus decreasing your on-line time. And the SupraModem 2400i incorporates the advanced Intel 89024MS chip set. This design utilizes fewer parts, assuring operation long after the one-year warranty period.

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The SupraModem 2400i is very easy to use. It features autoanswer and autodial (tone and pulse) for

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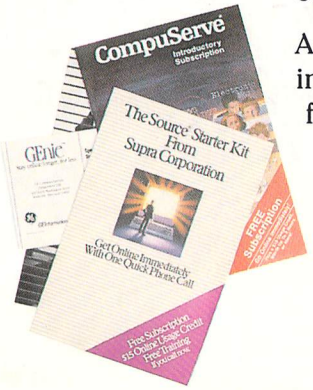
Also included with the SupraModem 2400i are introductory packages and free on-line time for several popular on-line services, making it even easier for you to start telecomputing right away.



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